IN[illegible]NG SCHOOL MATHEMATICS

WORKBOOK

Investigating School Mathematics

Workbook

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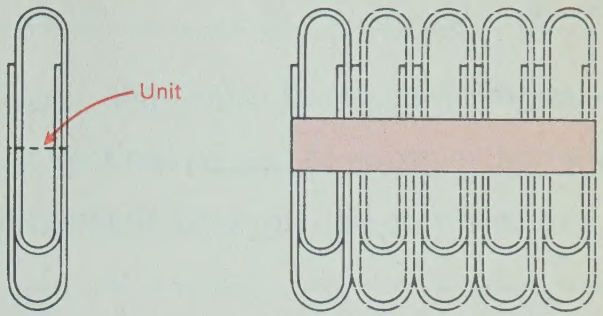
1 Numbers and Measurement

● *Counting Units to Find Length*

To measure the length of an object, we need to choose a **unit** of length.

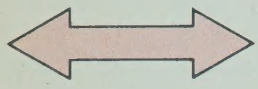
If the unit chosen is the distance across a paper clip,

then the length of the bar is 6 units.



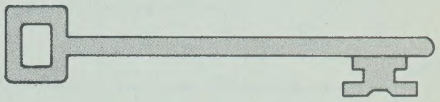
1. Use a paper-clip unit to measure the length of each object.

A



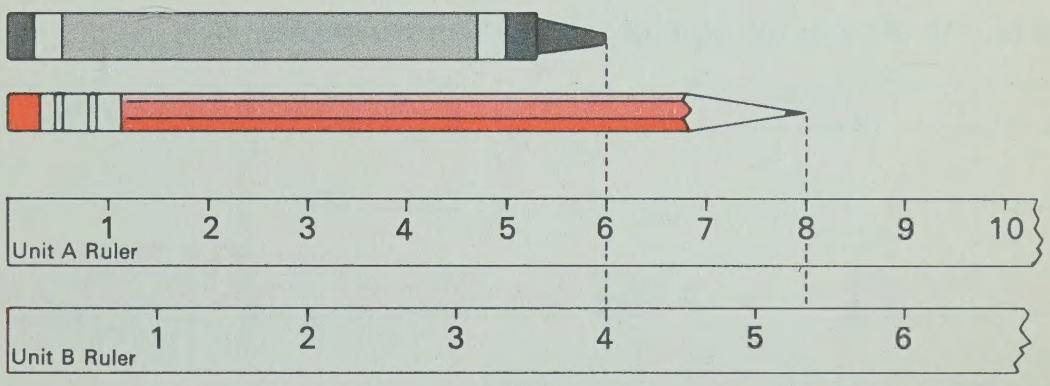
_____ units

B



_____ units

2. Use the two rulers below to help you fill in the blanks.



A Using unit A, the length of the crayon is _____.

Using unit B, it is _____.

B Using unit A, the length of the pencil is _____.

Using unit B, the length of the pencil to the nearest unit is _____.

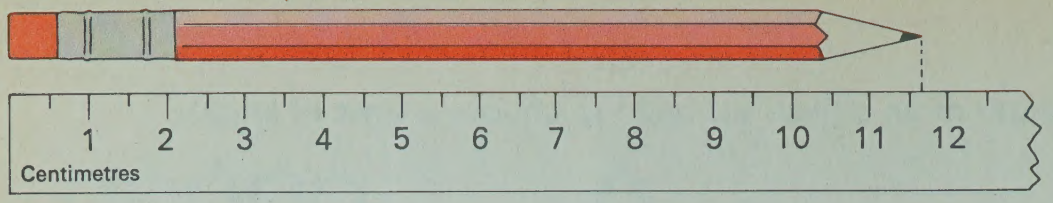
C If the length of an object is 9 using unit A,

then its length is _____ using unit B.

D If the length of an object is 8 using unit B,

then its length is _____ using unit A.

1.

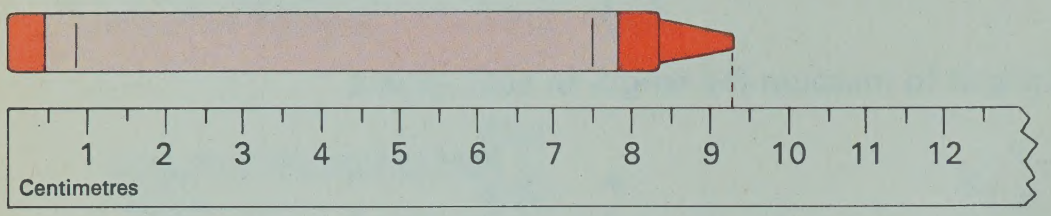


A The length of the pencil is between _____ and _____ centimetres.

B The length is nearer to _____ centimetres than to _____ centimetres.

C **To the nearest centimetre,** the length of the pencil is _____ centimetres.

2.

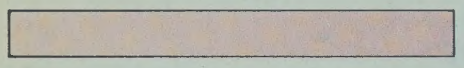


A The length of the crayon is between _____ and _____ centimetres.

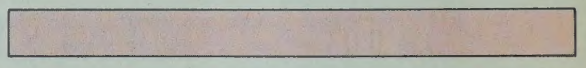
B The length is nearer to _____ centimetres than to _____ centimetres.

C **To the nearest centimetre,** the length of the crayon is _____ centimetres.

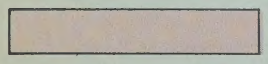
3. Give the length of each bar **to the nearest centimetre.**

A 

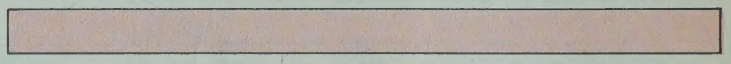
_____ cm

B 

_____ cm

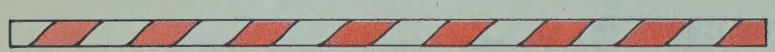
C 

_____ cm

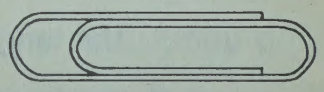
D 

_____ cm

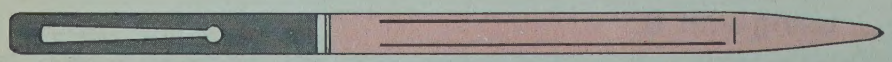
4. Give the length of each object **to the nearest centimetre.**

A 

_____ centimetres

B 

_____ centimetres

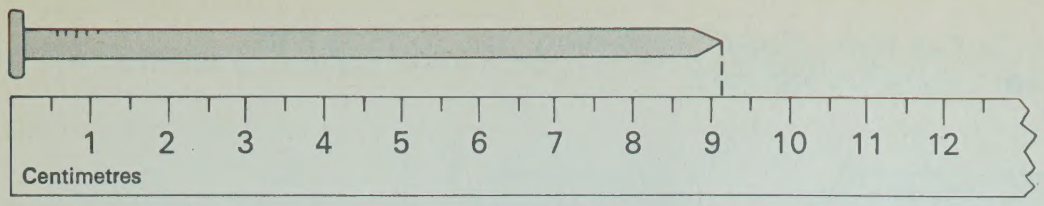
C 

_____ centimetres

D 

_____ centimetres

1.

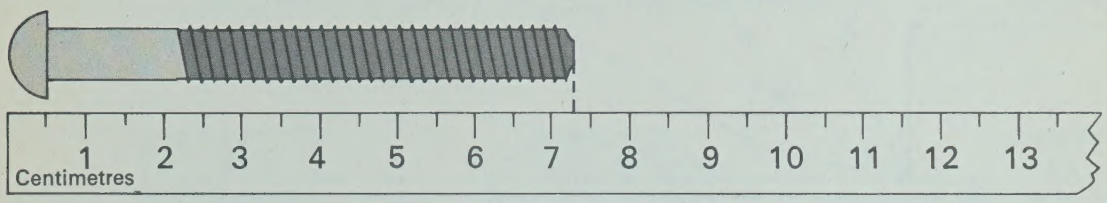


A The length of the nail is between $9\frac{1}{2}$ and _____ cm.

B The length of the nail is nearer to _____ cm than to $9\frac{1}{2}$ cm.

C **To the nearest half cm,** the length of the nail is _____ cm.

2.

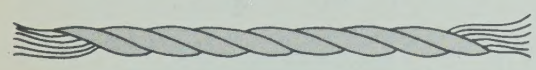


A The length of the bolt is between _____ and $7\frac{1}{2}$ centimetres.

B Its length is nearer to _____ centimetres than to 7 centimetres.

C **To the nearest half centimetre,** the length of the bolt is _____ centimetres.

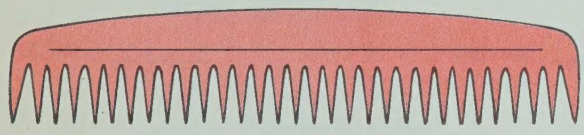
3. Give the length of each object **to the nearest half cm.**

A 

_____ cm

B 

_____ cm

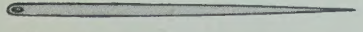
C 

_____ cm

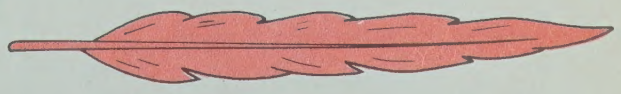
D 

_____ cm

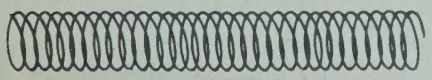
4. Give the length of each object **to the nearest half centimetre.**

A 

_____ centimetres

B 

_____ centimetres

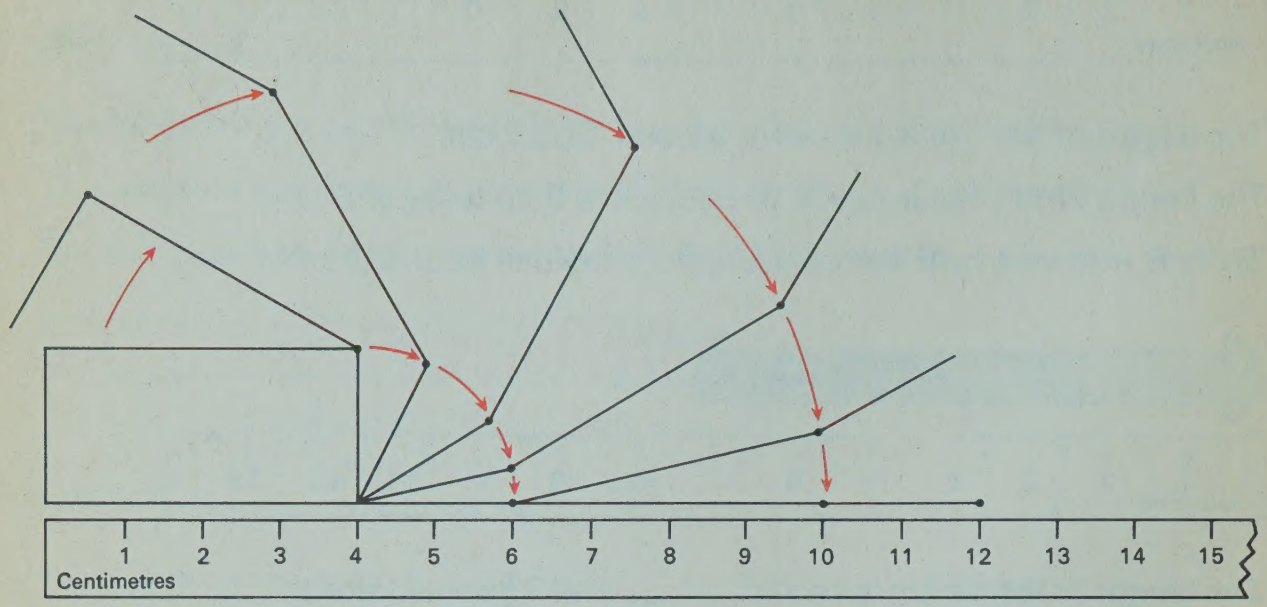
C 

_____ centimetres

D 

_____ centimetres

1. The figure will help you think about "unfolding" the rectangle to find its **perimeter** (distance around).

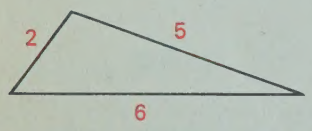


A The lengths of the four sides of the rectangle are 4, 2, 4, and _____ centimetres.

B The perimeter of the rectangle is _____ centimetres.

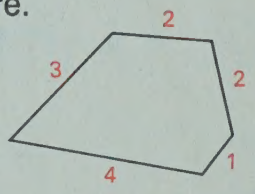
2. The length of each side of the figure is given. Find the perimeter of each figure.

A



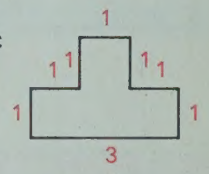
_____ units

B



_____ units

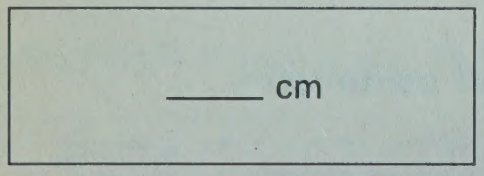
C



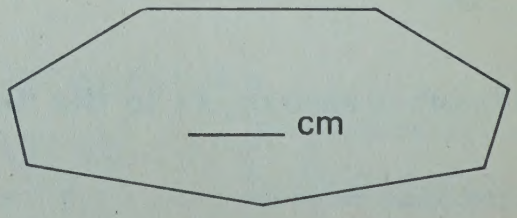
_____ units

3. Use your centimetre ruler to find the perimeter of each figure.

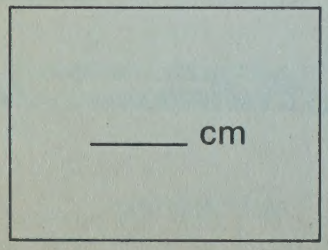
A



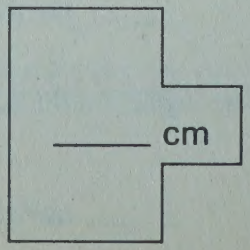
B



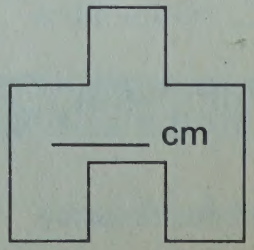
C



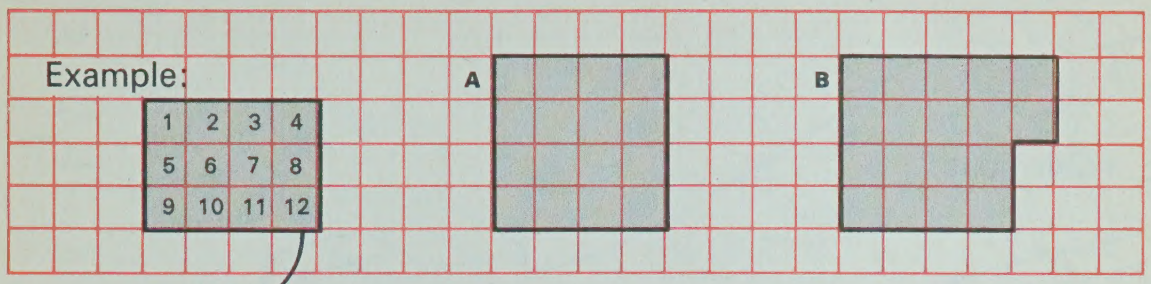
D



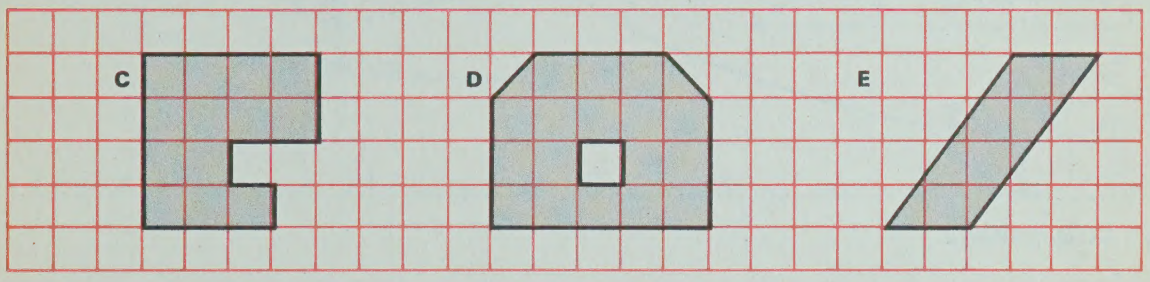
E



1. Find the number of square units (area) of each shaded region. The unit is ☐ .

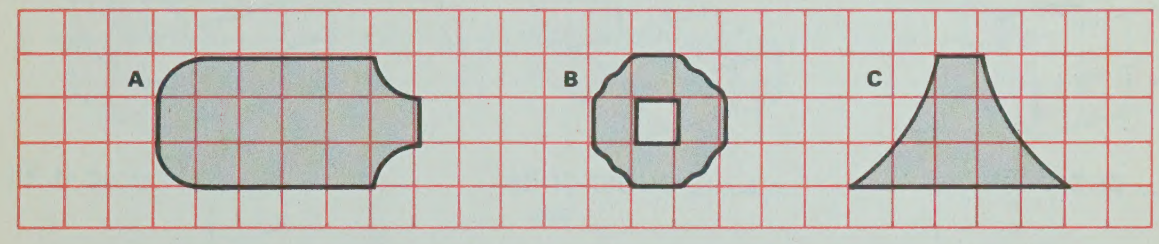


12 square units _____ square units _____ square units



_____ square units _____ square units _____ square units

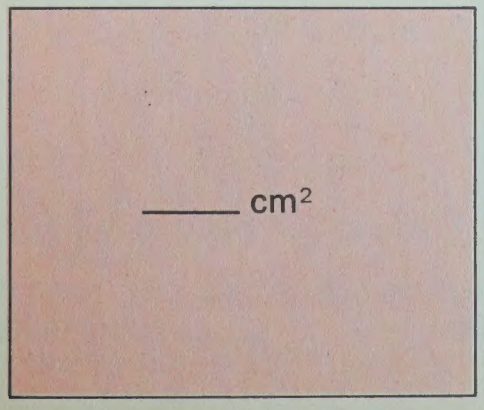
2. Estimate the area of each shaded region.



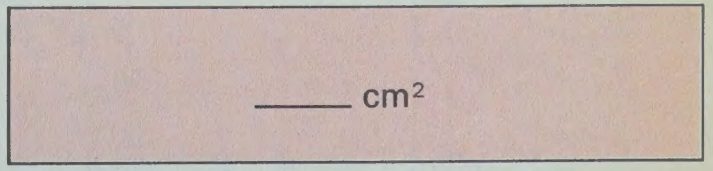
_____ square units _____ square units _____ square units

3. Find the area of each rectangular region.
Use your centimetre ruler in parts B and C.

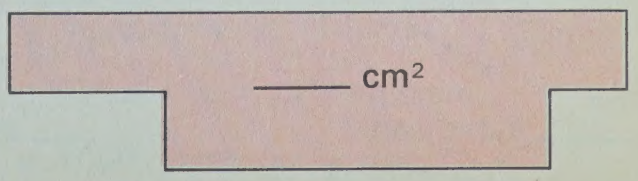
A

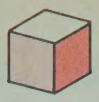


B

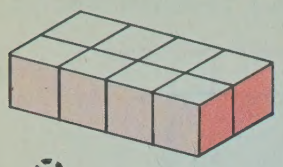


C



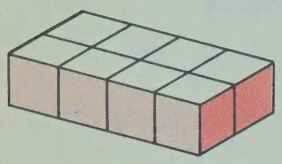
1. Give the volume of each figure. This  is the unit.

A



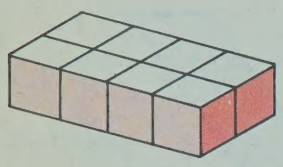
_____ cubic units

B



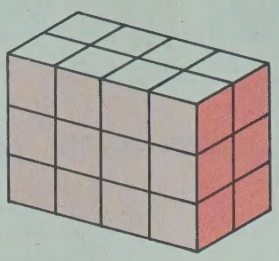
_____ cubic units

C



_____ cubic units

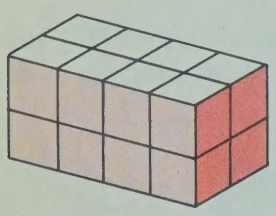
D



_____ cubic units

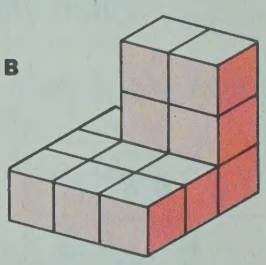
2. Give the volume of each figure.

A



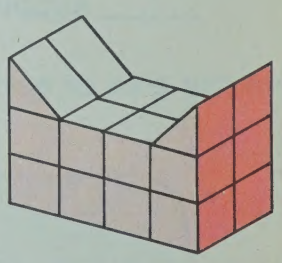
_____ cubic units

B



_____ cubic units

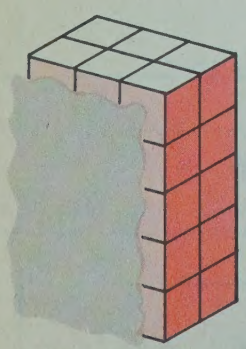
C



_____ cubic units

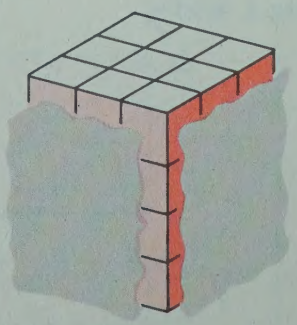
3. Find the volume of each figure even though parts of the figures are covered.

A



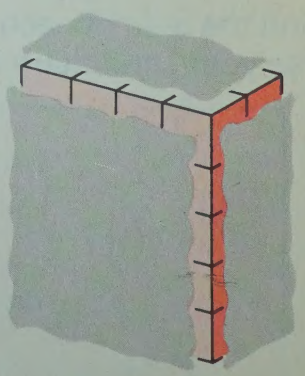
_____ cubic units

B



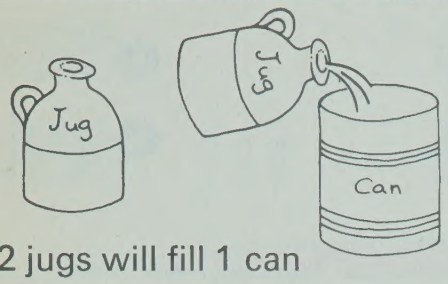
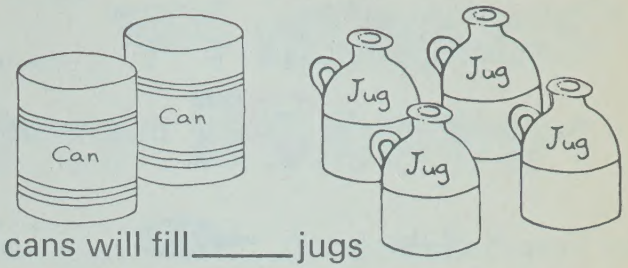
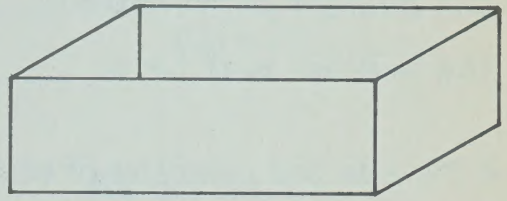
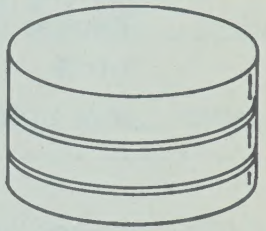
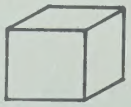
_____ cubic units

C



_____ cubic units

1. Give the missing numbers in the table

Since:	We know that:
 2 jugs will fill 1 can	 2 cans will fill_____jugs
 1 litre of water weighs 1 kilogram	 6 kilograms of water will fill a____litre container
 1 gram of water is 1 /1000 of a litre	 2000 grams of water equals _____ litres
 1 gram of water equals 1 cubic centimetre	 5 cm^3 is equal to _____ grams of water

2. Put a ring around the amount of water that is more.

A 1 kilogram or (2 litres)

B 2 litres or 300 grams

C 1 kilogram or 300 grams

D 3 litres or 4000 cubic centimetres

E 4 grams or 6 cm^3

F 1000 cm^3 or 2 litres

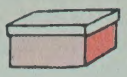
G 2 kilograms or 500 cm^3

H 500 grams or $4\frac{1}{2}$ litres

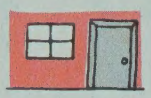
I 22 cm^3 or 14 kilograms

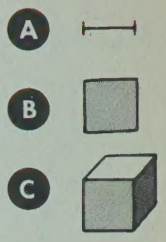
J 1000 grams or $\frac{1}{2}$ litre

1. Name the unit (A, B, or C) that you would use to find each of the following measurements.

A The amount of space inside a  . _____

B The distance across a  . _____

C The amount of a  that needs paint. _____



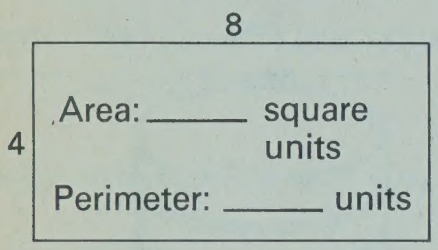
2. The length of the brush 

to the nearest centimetre is _____ centimetres,

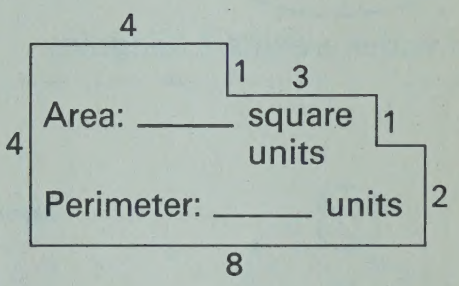
to the nearest half cm is _____ cm.

3. Find the area and perimeter of each figure.

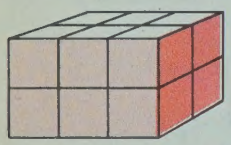
A



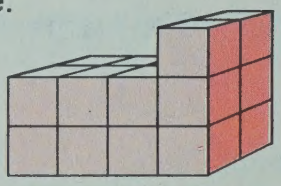
B



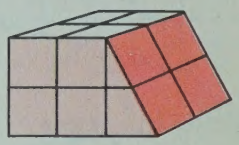
4. Find the volume of each figure.

A 

_____ cubic units

B 

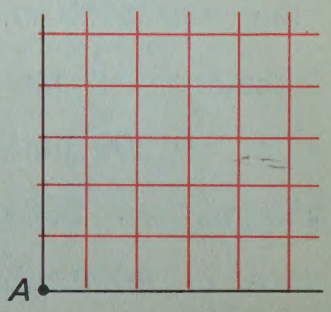
_____ cubic units

C 

_____ cubic units

Change of Pace

The figure represents streets in a town. Mark with a dot all possible ending points if you start at A and walk 4 blocks along the streets without retracing your steps. Each unit (—) is one block. Put the letter B beside the dot that is closest to *A*.

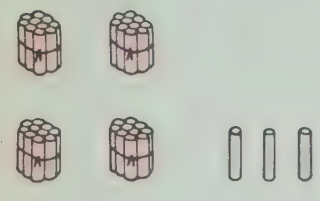


2 Numbers and Numerals

Understanding Place Value

1. Write the numerals.

A



_____ tens and _____

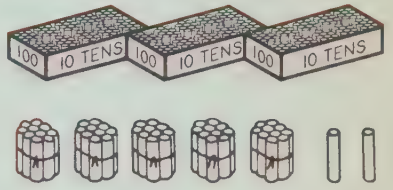
We write _____.

B

_____ tens and _____

We write _____.

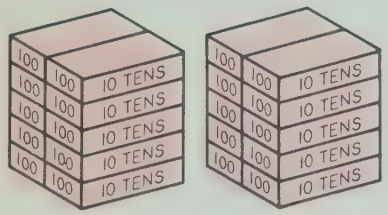
C



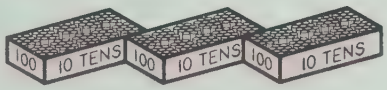
_____ hundreds, _____ tens, and 2

We write _____.

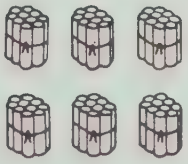
D



_____ thousands



_____ hundreds



_____ tens

_____ ones

For this number of sticks, we write _____.

2. Write a numeral for each exercise.

A 3 tens and 6 ones _____.

B 8 hundreds, 0 tens, and 3 ones _____.

C 2 thousands, 9 hundreds, 6 tens, and 4 ones _____.

3. Give the missing digits.

A 365 means _____ hundreds, _____ tens, and _____ ones.

B 608 means _____ hundreds, _____ tens, and _____ ones.

C 1390 means _____ thousands, _____ hundreds, _____ tens, and _____ ones.

4. Solve the equations.

A $34 = 30 + \_\_\_\_$

B $58 = \_\_\_\_ + 8$

C $18 = \_\_\_\_ + 8$

D $654 = 600 + 50 + \_\_\_\_$

E $837 = \_\_\_\_ + 30 + 7$

F $546 = 500 + \_\_\_\_ + 6$

G $4321 = 4000 + \_\_\_\_ + 20 + 1$

H $7895 = \_\_\_\_ + 800 + 90 + 5$

1. Write **thousands, hundreds, tens,** or **ones** in each blank.

A In 654, the 5 means 5 _____.

B In 6251, the 2 means 2 _____.

C In 8734, the 4 means 4 _____.

D In 9165, the 9 means 9 _____.

2. Write a numeral for each exercise.

A 7 thousands, 8 hundreds, 5 tens, and 6 ones _____.

B 2 hundreds, 5 ones, 9 thousands, and 3 tens _____.

C 3 hundreds, 0 tens, 7 ones, and 5 thousands _____.

3. Find the sums.

A $7000 + 800 + 20 + 6$ _____

B $5000 + 200 + 7 + 80$ _____

C $4000 + 300 + 60 + 1$ _____

D $700 + 3 + 8000 + 60$ _____

4. Solve the equations.

A $3749 = 3000 + 700 + 40 +$ _____

B $2562 = 2000 +$ _____ $+ 60 + 2$

C $6113 = 6000 + 100 +$ _____ $+ 3$

D $18\,589 = 10\,000 +$ _____ $+ 500 + 80 + 9$

E $95\,250 = 90\,000 + 5000 +$ _____ $+ 50$

F $348\,100 = 300\,000 +$ _____ $+ 8000 + 100$

5. Write the numerals for the numbers that are **one less** and **one more** than the numbers given.

A _____ 699 _____

B _____ 1001 _____

C _____ 3679 _____

D _____ 8999 _____

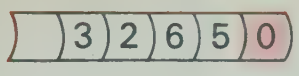
E _____ 89 999 _____

F _____ 899 999 _____

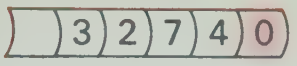
6. Write the correct numeral for each exercise.

A 8 ten thousands, 5 thousands, 2 hundreds, and 2 tens _____

B 7 hundred thousands, 9 ten thousands, and 2 thousands _____

1. (A) 

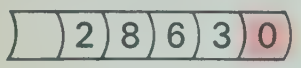
This odometer shows that car A has travelled 3265 km.

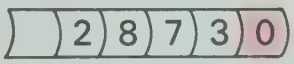
(B) 

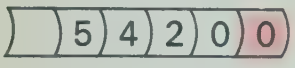
This odometer shows that car B has travelled 3274 km.

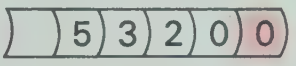
Which car has travelled farther? _____

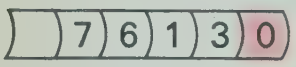
2. For each pair of odometers, put a ring around the one that shows the greater number of kilometres.

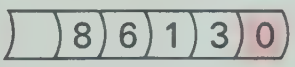
A 

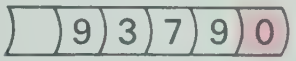


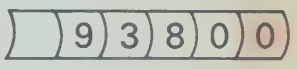
B 

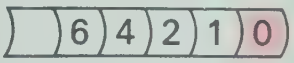


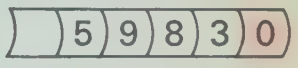
C 

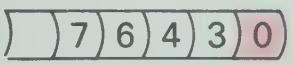


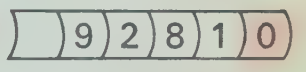
D 



E 



F 



3. Write the correct sign ($<$ or $>$) in each ◯.

A	5278 > 5268	D	6125 ◯ 6025	G	8346 ◯ 9071
B	2614 < 2674	E	7183 ◯ 7099	H	8468 ◯ 2498
C	3572 ◯ 4572	F	8651 ◯ 8649	I	6521 ◯ 7000

4. List the following set of numbers in order, starting with the smallest.

3426 2951 3265 2987 3333

_____ _____ _____ _____ _____

smallest largest

5. The area of island A is 3435 square kilometres.
The area of island B is 2868 square kilometres.

Which island is larger? _____

6. There are 274 448 people in City A and 274 359 people in City B.

Which city has more people? _____

7. The airline distance between Vancouver and Montreal is 4892 kilometres. The distance between San Francisco and Montreal is 5065 kilometres.

Which city is farther from Montreal? _____

1. 246 378 — These digits tell the number of **thousands.** There are 246 **thousands** in 246 378.

318 512 439 — These digits tell the number of **millions.** There are 318 **millions** in 318 512 439.

A In 315 142 there are _____ thousands.

B In 48 856 there are _____ thousands.

C In 809 209 there are _____ thousands.

D In 7327 there are _____ thousands.

E In 276 519 206 there are _____ millions.

F In 76 309 516 there are _____ millions.

G In 8 652 185 there are _____ millions.

H In 206 984 469 there are _____ millions.

2. A In 265 327 461 there are _____ millions and _____ thousands.

B In 46 370 659 there are _____ millions and _____ thousands.

C In 500 062 327 there are _____ millions and _____ thousands.

D In 3 008 605 there are _____ millions and _____ thousands.

E In 314 209 651 there are _____ millions and _____ thousands.

F In 280 406 721 there are _____ millions and _____ thousands.

3. Write the number that is:

A 1000 more than 286 573 _____

B 100 more than 2 365 483 _____

C 100 000 more than 3 256 348 _____

D 1000 more than 15 327 651 _____

E 1 000 000 more than 27 326 518 _____

F 100 000 more than 14 327 602 _____

G 100 000 more than 51 278 651 _____

H 1 000 000 more than 29 356 289 _____

I 10 000 000 more than 7 836 427 _____

1. Give the number that is **one more** than:

A	9 _____	E	199 _____	I	5399 _____
B	19 _____	F	499 _____	J	9999 _____
C	99 _____	G	999 _____	K	10 999 _____
D	109 _____	H	1099 _____	L	309 999 _____

2. Give the number that is **one less** than:

A	10 _____	E	1000 _____	I	11 730 _____
B	100 _____	F	5400 _____	J	13 700 _____
C	190 _____	G	7220 _____	K	27 000 _____
D	400 _____	H	9200 _____	L	624 010 _____

3. Complete the table by giving the number that is 1, 10, 100, or 1000 more than the given number.

Given number	1 more	10 more	100 more	1000 more
3765	3766	3775	3865	4765
4283	4284	4293	4383	_____
6241	6242	6251	_____	_____
5243	_____	_____	_____	_____
16 704	_____	_____	_____	_____
375 038	_____	_____	_____	_____

4. Using the digits at the right, form the correct 5-digit numeral for each part.

A What is the largest number you can make? _____

B What is the smallest number you can make? _____

C Give the smallest number that has the digit 1 in the ones place. _____

D Give the largest number that has the digit 5 in the ones place. _____

E What is the largest number you can make that has the digit 2 in the thousands place? _____

1. Write **thousands, hundreds, tens,** or **ones** in each blank.

A In 2658, the 6 means 6 _____.

B In 3472, the 2 means 2 _____.

C In 4362, the 4 means 4 _____.

D In 5280, the 8 means 8 _____.

2. Solve the equations.

A $58 = \_\_\_\_ + 8$

B $327 = \_\_\_\_ + 20 + 7$

C $286 = 200 + 80 + \_\_\_\_$

D $504 = \_\_\_\_ + 4$

3. A What number is 100 less than 2365? _____

B What number is 1 more than 1999? _____

C What number is 1000 less than 4628? _____

4. Give the correct sign ($<$ or $>$) for each ◯.

A 561 ◯ 661 B 3472 ◯ 3462 C 6427 ◯ 6399 D 17 281 ◯ 17 290

5. A In 23 486 327 there are _____ millions and _____ thousands.

B In 340 286 510 there are _____ millions and _____ thousands.

C In 9 300 654 there are _____ millions and _____ thousands.

6. Write each numeral as in the example. Example: $3264 = 3000 + 200 + 60 + 4$

A $278 =$ _____

B $5643 =$ _____

C $78\,649 =$ _____

Change of Pace

Jim is 115 cm tall. At a certain time of day his shadow is 230 cm long. At this same time,

A how long is his sister's shadow if she is 1 m tall? _____

B how long is his father's shadow if he is 180 cm tall? _____

C how tall is his mother if her shadow is 340 cm long? _____

D how tall is his house if its shadow is 16 m long? _____

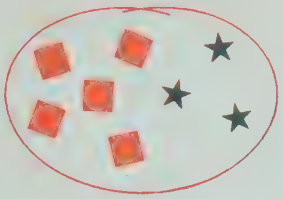
3 Addition and Subtraction

Missing Addends

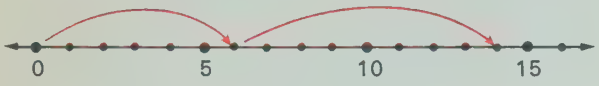
1. A There are _____ of these ■.

B There are _____ of these ★.

C There are _____ shapes in all.

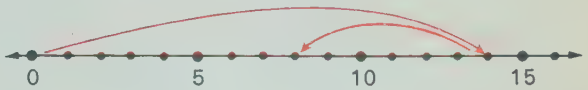


2. Write an addition equation for the number-line picture.



○ + = _____

3. Write a subtraction equation for the number-line picture.



_____

4. You can find differences by thinking about missing addends.

This addend is the same number as this difference.

? + 8 = 13

13 − 8 = □

5. Find each difference by first finding the missing addend.

A □ + 6 = 14

14 − 6 = □

B □ + 9 = 13

13 − 9 = □

C □ + 4 = 12

12 − 4 = □

6. A Since 57 + 84 = 141, we know that 141 − 84 = _____.

B Since 43 + 69 = 112, we know that 112 − 69 = _____

and 112 − 43 = _____.

C Since 75 + 66 = 141, we know that 141 − 75 = _____

and 141 − 66 = _____.

Complete each table.

1.

	Add 6	
	4	10
A	7	
B	9	
C	3	

2.

	Add 9	
A	7	
B	4	
C		10
D	0	

3.

	Subtract 8	
	13	5
A	11	
B	17	
C	15	

4.

	Subtract 6	
A	12	
B	9	
C	14	
D		5

5. Find the sums and differences.

A $\begin{array}{r} 3 \\ +6 \\ \hline \end{array}$	B $\begin{array}{r} 9 \\ -2 \\ \hline \end{array}$	C $\begin{array}{r} 7 \\ +7 \\ \hline \end{array}$	D $\begin{array}{r} 14 \\ -3 \\ \hline \end{array}$	E $\begin{array}{r} 5 \\ +6 \\ \hline \end{array}$	F $\begin{array}{r} 11 \\ +5 \\ \hline \end{array}$	G $\begin{array}{r} 8 \\ +5 \\ \hline \end{array}$
H $\begin{array}{r} 9 \\ +5 \\ \hline \end{array}$	I $\begin{array}{r} 4 \\ +6 \\ \hline \end{array}$	J $\begin{array}{r} 10 \\ -7 \\ \hline \end{array}$	K $\begin{array}{r} 12 \\ -8 \\ \hline \end{array}$	L $\begin{array}{r} 3 \\ +9 \\ \hline \end{array}$	M $\begin{array}{r} 13 \\ -4 \\ \hline \end{array}$	N $\begin{array}{r} 9 \\ +6 \\ \hline \end{array}$

6. Give the missing numbers in the tables.

	Addend	Addend	Sum
A	8	3	
B	4		11
C		6	13
D	5	9	

	Addend	Addend	Sum
E		9	15
F	7		14
G		2	10
H	8	9	

7. 16 marbles. Lost 9.

How many left? _____

8. Have 8 shells. Found 7 more.

How many shells? _____

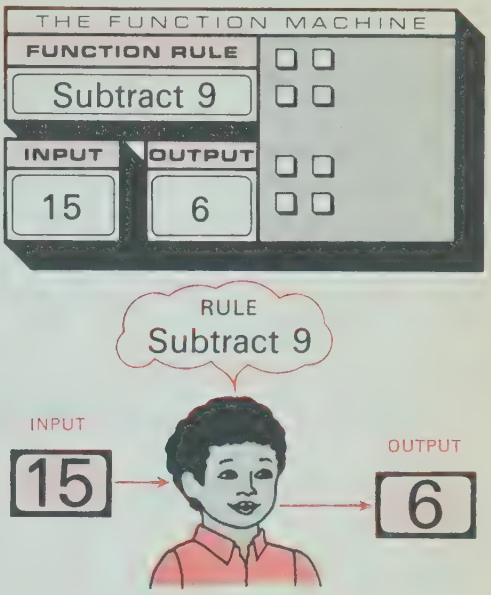
9. Have 7 cats. Get 4 more.

How many in all? _____

10. 17 cookies. Ate 9.

How many left? _____

1. When the number 15 is put into the function machine and the function rule is "subtract 9," the output number is 6.



Study the second row of the table. Then complete the table.

Function Rule: Subtract 9

	INPUT	OUTPUT
	15	6
	13	4
A	11	
B	10	

In exercises 2 through 9, give the missing numbers and function rules.

2. Function Rule: Add 8

	INPUT	OUTPUT
	6	14
	9	17
A	8	
B	7	
C	5	

3. Function Rule: Subtract 7

	INPUT	OUTPUT
	11	4
A	13	
B	16	
C	15	
D	14	

4. Function Rule: Add 6

	INPUT	OUTPUT
A	8	
B	7	
C	9	
D	6	
E	4	

5. Function Rule: Subtract 5

	INPUT	OUTPUT
A	11	
B	14	
C	10	
D	12	
E	13	

6. Function Rule: A ____

	INPUT	OUTPUT
	7	1
	6	0
	8	2
B	15	
C	14	

7. Function Rule: Add 1 if odd; Subt. 1 if even

	INPUT	OUTPUT
	7	8
	6	5
A	5	
B	8	
C	3	

8. Function Rule: Double and add 1

	INPUT	OUTPUT
	7	15
	6	13
A	5	
B	8	
C	9	

9. Function Rule: A ____

	INPUT	OUTPUT
	8	15
	3	5
	6	11
B	5	
C	2	

1. Solve the equations.

A Since $9 + 8 = 17$, we know that $8 + 9 =$ _____.

B Since $56 + 78 = 134$, we know that $78 + 56 =$ _____.

C $19 + 56 =$ _____ $+ 19$

D $27 +$ _____ $= 81 + 27$

E $327 + 761 = 761 +$ _____

F _____ $+ 956 = 956 + 832$

When we change the **order** of the addends, we get the same sum.

2. Solve the equations.

A Since $8 + (7 + 2) = 17$, we know that $(8 + 7) + 2 =$ _____.

B Since $(36 + 28) + 95 = 159$, we know that $36 + (28 + 95) =$ _____.

C $(7 + 8) + 6 = 7 + \left(8 + \square\right)$

D $24 + \left(\square + 32\right) = (24 + 19) + 32$

E $17 + (86 + 59) = \left(\square + 86\right) + 59$

When we add, we can change the **grouping** and get the same sum.

3. Find the sums. Look for combinations that make 10. Remember:

Because of the order and grouping principles, we can add any two addends first and get the same sum.

A $3 + 8 + 2 + 6 =$ _____

B $5 + 4 + 3 + 5 =$ _____

C $7 + 2 + 6 + 8 =$ _____

D $4 + 7 + 6 + 5 =$ _____

E $6 + 8 + 4 + 2 =$ _____

F $9 + 6 + 3 + 1 =$ _____

4. Solve the equations.

A $7 + 0 =$ _____

B _____ $+ 0 = 11$

C $23 +$ _____ $= 23$

D $47 +$ _____ $= 47$

E _____ $+ 19 = 19$

F $0 +$ _____ $= 32$

The sum of any number and zero is that number.

1. Find the sums.

A			3			**B**			50		
	3	6	3				50	4	54	
20	20	20	26	26		50	4	30	30	54
+40	+40	+40	+40	+43		+30	+30	+2	+2	+32

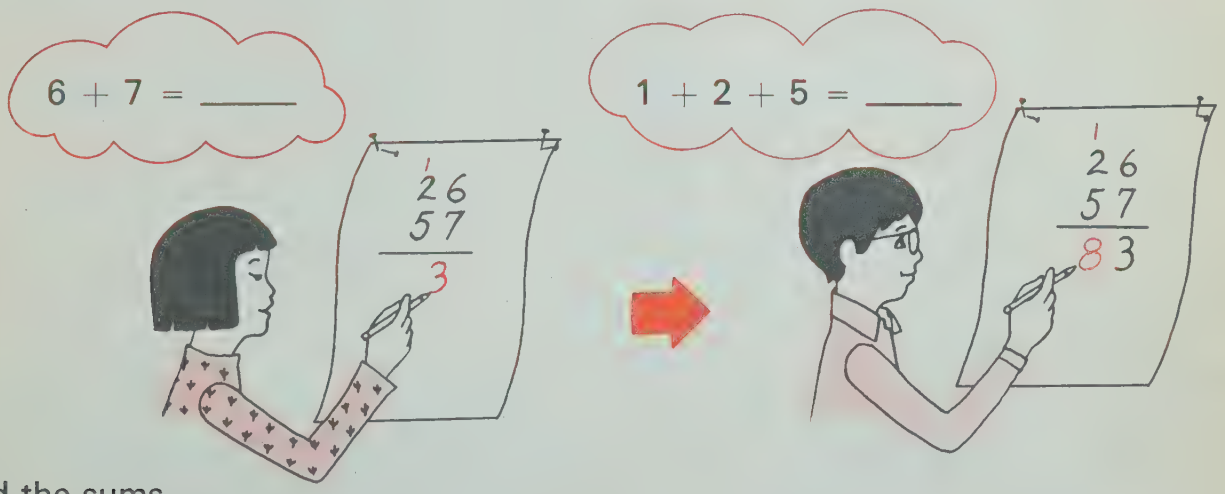
C			30			**D**			60		
	30	5	35				60	7	67	
30	5	10	10	35		60	7	20	20	67
+10	+10	+1	+1	+11		+20	+20	+2	+2	+22

2. Find the sums as in the example.

Example:
$$\begin{array}{r} 27 \\ +56 \\ \hline 13 \\ +70 \\ \hline 83 \end{array}$$

A $\begin{array}{r} 43 \\ +29 \end{array}$ **B** $\begin{array}{r} 66 \\ +28 \end{array}$ **C** $\begin{array}{r} 59 \\ +34 \end{array}$ **D** $\begin{array}{r} 65 \\ +29 \end{array}$

3. Study each picture and give the missing sums.



4. Find the sums.

A	56	**B**	38	**C**	49	**D**	78	**E**	64	**F**	56
	+43		+64		+56		+95		+27		+18
G	79	**H**	98	**I**	64	**J**	39	**K**	58	**L**	67
	+56		+71		+83		+64		+79		+84

1. Find the sums.

A	B	C	D	E	F	G	H	I
6	9	7	5	7	5	7	6	7
2	2	2	4	2	2	8	2	1
8	3	1	2	6	3	4	4	2
+4	+4	+6	+3	+1	+4	+1	+3	+3

J $8 + 6 + 2 =$ _____

K $9 + 1 + 5 =$ _____

L $6 + 2 + 8 =$ _____

M $5 + 6 + 5 =$ _____

N $7 + 2 + 1 =$ _____

O $8 + 3 + 4 =$ _____

P $7 + 1 + 6 =$ _____

Q $3 + 8 + 4 =$ _____

R $9 + 6 + 3 =$ _____

S $7 + 5 + 8 =$ _____

T $9 + 3 + 6 + 2 =$ _____

U $7 + 6 + 3 + 4 =$ _____

V $9 + 2 + 1 + 8 =$ _____

W $7 + 3 + 9 + 9 =$ _____

X $8 + 3 + 2 + 5 =$ _____

Y $8 + 2 + 8 + 4 =$ _____

2. Complete each magic square.

A

6	7	
1		
8	3	

B

10	6	5
	7	
9		

C

	2	
8	4	0
		5

3. Short stories.

A 6 robins. 8 sparrows.

How many birds? _____

B 9 boys. 8 girls.

How many children? _____

C 2 weeks.

How many days? _____

D Rained 4 days. Sunny 9 days.

How many days? _____

E 6 drums. 9 bugles.

How many instruments? _____

F Stayed 9 days. Then stayed 1 more week. Stayed how long in all? _____

1. Find the sums.

A	$\begin{array}{r} 8 \\ +\,7 \end{array}$ →	$\begin{array}{r} 68 \\ +\,57 \end{array}$ →	$\begin{array}{r} 468 \\ +\,957 \end{array}$ →	$\begin{array}{r} 7468 \\ +\,5957 \end{array}$ →	$\begin{array}{r} 37\,468 \\ +\,85\,957 \end{array}$
B	$\begin{array}{r} 9 \\ +\,6 \end{array}$ →	$\begin{array}{r} 59 \\ +\,76 \end{array}$ →	$\begin{array}{r} 459 \\ +\,676 \end{array}$ →	$\begin{array}{r} 8459 \\ +\,9676 \end{array}$ →	$\begin{array}{r} 58\,459 \\ +\,79\,676 \end{array}$
C	$\begin{array}{r} 8 \\ +\,5 \end{array}$ →	$\begin{array}{r} 38 \\ +\,45 \end{array}$ →	$\begin{array}{r} 938 \\ +\,645 \end{array}$ →	$\begin{array}{r} 7938 \\ +\,6645 \end{array}$ →	$\begin{array}{r} 97\,938 \\ +\,46\,645 \end{array}$

2. Find the sums.

A	$\begin{array}{r} 607 \\ +\,834 \end{array}$	B $\begin{array}{r} 964 \\ +\,289 \end{array}$	C $\begin{array}{r} 7462 \\ +\,9317 \end{array}$	D $\begin{array}{r} 8652 \\ +\,9064 \end{array}$	E $\begin{array}{r} 98\,463 \\ +\,72\,169 \end{array}$
F	$\begin{array}{r} 286 \\ 430 \\ +\,927 \end{array}$	G $\begin{array}{r} 651 \\ 287 \\ +\,965 \end{array}$	H $\begin{array}{r} 7364 \\ 8091 \\ +\,7436 \end{array}$	I $\begin{array}{r} 7064 \\ 9391 \\ +\,8405 \end{array}$	J $\begin{array}{r} 67\,283 \\ 90\,726 \\ +\,54\,391 \end{array}$
K	$\begin{array}{r} 643 \\ 728 \\ +\,569 \end{array}$	L $\begin{array}{r} 758 \\ 304 \\ +\,619 \end{array}$	M $\begin{array}{r} 7268 \\ 473 \\ 5860 \\ +\,29 \end{array}$	N $\begin{array}{r} 9642 \\ 17 \\ 8406 \\ +\,927 \end{array}$	O $\begin{array}{r} 36\,280 \\ 4\,076 \\ 91\,824 \\ +\,698 \end{array}$

Change of Pace

A code and an addition exercise are given. See if you can solve the code. Each letter stands for a digit. For example, C stands for the digit 8.

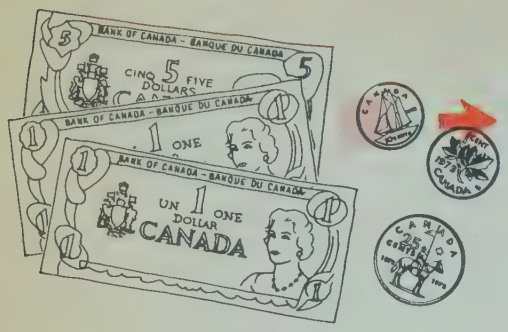
Code:

A = [redacted] B = [redacted]

C = 8 D = [redacted] E = [redacted]

$$\begin{array}{r} 8DC8 \\ +\,AEB \\ \hline BDBE \end{array}$$

Clue: Could B stand for more than 1 ?



We say: "Seven dollars **and** thirty-six cents."

We write: $7.36

The period separates dollars from cents.

1. Give the total amounts.

A Since $\begin{array}{r} 276 \\ +341 \\ \hline 617 \end{array}$, we know that $\begin{array}{r} \$2.76 \\ +3.41 \\ \hline \end{array}$.

B Since $\begin{array}{r} 507 \\ 628 \\ +236 \\ \hline 1371 \end{array}$, we know that $\begin{array}{r} \$5.07 \\ 6.28. \\ +2.36 \\ \hline \end{array}$

2. Find the total amounts.

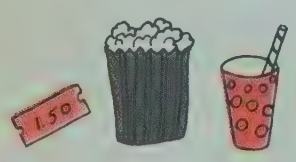
A $\begin{array}{r} \$18.55 \\ +1.34 \\ \hline \end{array}$ B $\begin{array}{r} \$25.19 \\ +32.44 \\ \hline \end{array}$ C $\begin{array}{r} \$8.45 \\ +9.67 \\ \hline \end{array}$ D $\begin{array}{r} \$52.14 \\ +54.56 \\ \hline \end{array}$ E $\begin{array}{r} \$1.79 \\ +5.68 \\ \hline \end{array}$

F $\begin{array}{r} \$39.37 \\ +24.77 \\ \hline \end{array}$ G $\begin{array}{r} \$25.89 \\ +10.29 \\ \hline \end{array}$ H $\begin{array}{r} \$3.97 \\ +0.65 \\ \hline \end{array}$ I $\begin{array}{r} \$129.35 \\ +374.87 \\ \hline \end{array}$ J $\begin{array}{r} \$2749.50 \\ +5277.77 \\ \hline \end{array}$

3. Short stories.

A Had $5.39.
Earned $2.70 more.

How much in all? _____



B

Movie ticket	$1.50
Popcorn	0.35
Soda	0.35

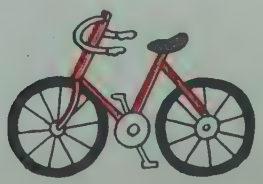
How much in all? _____

C Had $23.65 in a savings account.
Put in $7.86 more.

How much in savings now? _____

D A bike costs $59.98.
A basket costs $3.49.
Tax is $1.94.

How much in all? _____



1. Give the missing numbers in each equation.

Think
63 = 50 + _____

```
 5 13
 6 3
-2 7
-----
```

Think
13 − 7 = _____

```
 5 13
 6 3
-2 7
-----
   6
```

Think
5 − 2 = _____

```
 5 13
 6 3
-2 7
-----
 3 6
```

2. Find the differences.

A	B	C	D	E	F	G
61 − 44	72 − 29	84 − 56	30 − 19	92 − 65	73 − 27	67 − 38

3. Study the steps and give the missing numbers in the equations.

Think
I can't subtract 7 from 5.

```
  9 3 5
- 2 8 7
-------
```

Think
35 = 20 + _____

```
   2 15
  9 3 5
- 2 8 7
-------
```

Think
15 − 7 = _____

```
   2 15
  9 3 5
- 2 8 7
-------
      8
```

Think
92 = 80 + _____

```
 8 12 15
 9 3 5
- 2 8 7
-------
     8
```

Think
12 − 8 = _____

```
 8 12 15
 9 3 5
- 2 8 7
-------
   4 8
```

Think
8 − 2 = _____

```
 8 12 15
 9 3 5
- 2 8 7
-------
 6 4 8
```

4. Find the differences.

A	B	C	D	E
146 − 81	153 − 67	961 − 268	435 − 174	267 − 158

F	G	H	I	J
817 − 734	2934 − 1561	8153 − 4832	7812 − 3728	76432 − 32766

1. Study the examples. Then give the missing numbers for each exercise.

Examples: 802 = 80 tens + 2 or 79 tens + 12
7005 = 700 tens + 5 or 699 tens + 15
6043 = 60 hundreds + 43 or 59 hundreds + 143

A 702 = _____ tens + 2 or 69 tens + _____

B 508 = 50 tens + _____ or _____ tens + 18

C 900 = _____ tens + 0 or _____ tens + 10

D 1308 = 130 tens + _____ or 129 tens + _____

E 6004 = _____ tens + 4 or _____ tens + 14

F 7004 = 700 tens + _____ or _____ tens + 14

G 8026 = _____ hundreds + 26 or _____ hundreds + 126

H 2035 = 20 hundreds + _____ or _____ hundreds + 135

I 7060 = _____ hundreds + 60 or _____ hundreds + 160

J 5037 = 50 hundreds + _____ or _____ hundreds + 137

2. Give each missing number as in the example.

Example: 6913 ~~703~~

A 12 ~~402~~ B 15 ~~605~~ C 12 ~~9002~~ D 14 ~~8004~~

E 11 ~~601~~ F 10 ~~200~~ G 11 ~~7001~~ H 16 ~~7062~~ I 13 ~~4032~~

3. Find the differences.

A 203 − 156	B 406 − 158	C 702 − 135	D 900 − 246	E 600 − 338
F 504 − 257	G 200 − 144	H 8032 − 3471	I 9046 − 2869	J 7005 − 5432
K 8002 − 6444	L 7102 − 4325	M 8304 − 4687	N 5074 − 1683	O 6200 − 2784

1. Give the total distance for each trip.

Touring Distances (Kilometres)	
Vancouver to Toronto	4580
Toronto to Montreal	556
Montreal to Halifax	1348
Halifax to Victoria	6344
Victoria to Montreal	4996
Winnipeg to Ottawa	2173
Ottawa to Calgary	3496
Calgary to Regina	753
Toronto to Ottawa	426

   A Vancouver to Toronto to Montreal _____ km

   B Montreal to Halifax to Victoria _____ km

   C Victoria to Montreal to Toronto _____ km

   D Ottawa to Calgary to Regina _____ km

   E Winnipeg to Ottawa to Toronto _____ km

2. Tell how much farther the first trip is than the second.

   A Toronto to Montreal; Toronto to Ottawa _____

   B Victoria to Halifax; Victoria to Montreal _____

   C Calgary to Regina; Montreal to Toronto _____

   D Winnipeg to Ottawa; Vancouver to Toronto _____

3. Which is farther, Toronto to Ottawa or

   Ottawa to Winnipeg? _____

   How much further? _____

4. It is 6344 kilometres from Victoria to Halifax.
   How much further is it if you stop in Montreal on the way from Victoria to Halifax? _____ km

5. It costs $48.50 to fly from Toronto to Montreal.
   It costs $64.50 to fly from Toronto to Victoria.

   How much more does it cost to fly from Toronto to Victoria? _____

1. Solve the equations.

A $9 + 6 =$ _____ B $7 +$ _____ $= 12$ C $13 - 7 =$ _____

D $12 - 5 =$ _____ E _____ $+ 8 = 13$ F $17 -$ _____ $= 9$

2. Solve the equations.

A $47 = 30 +$ _____ B $78 = 60 +$ _____ C $70 = 60 +$ _____

3. Find the differences.

Since $27 + 85 = 112$, we know that $112 - 85 =$ _____.

$112 - 27 =$ _____.

4. Solve the equations.

A $68 +$ _____ $= 23 + 68$ B $17 + (68 + 95) = (17 +$ _____$) + 95$

5. Find the sums and differences.

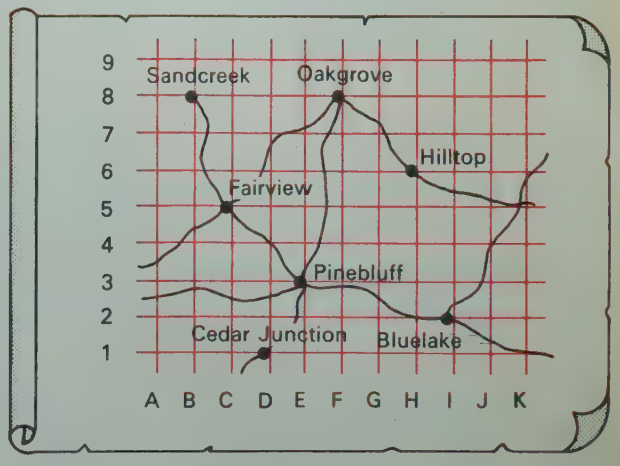
A $\begin{array}{r} 37 \\ +\,69 \\ \hline \end{array}$ B $\begin{array}{r} 53 \\ -\,26 \\ \hline \end{array}$ C $\begin{array}{r} 89 \\ +\,58 \\ \hline \end{array}$ D $\begin{array}{r} 174 \\ -\,86 \\ \hline \end{array}$ E $\begin{array}{r} \$5.28 \\ +\,6.94 \\ \hline \end{array}$ F $\begin{array}{r} \$7.06 \\ -\,1.58 \\ \hline \end{array}$

G $26 + 347 + 9 =$ _____ H $4603 - 2776 =$ _____

6. Jack bought a bat for \$1.75, a ball for \$2.39, and a glove for \$10.95. How much did he spend in all? _____

Change of Pace

We can use a letter and a number to locate each point on the map. For example, E-3 gives the location of Pinebluff. Give the location of the other cities.

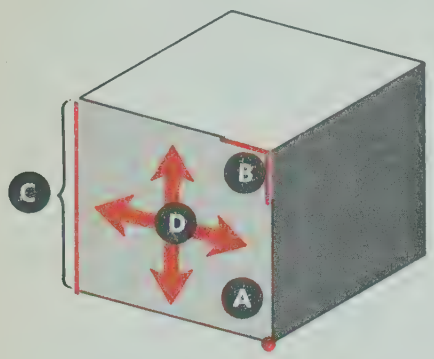


1. Fairview _____
2. Bluelake _____
3. Cedar Junction _____
4. Oakgrove _____
5. Hilltop _____
6. Sandcreek _____

4 Geometry

Points, Lines, Segments, and Angles

1. Write the name of the part of the cube (**edge**, **face**, **right angle**, or **vertex**) in the blanks below.



A _____

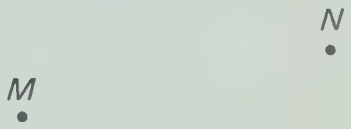
B _____

C _____

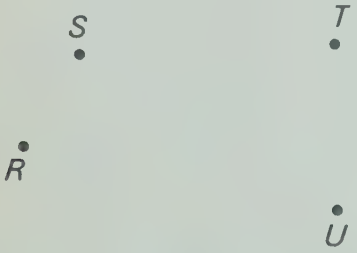
D _____

2. Use points *A* and *B* to draw $\overline{AB}$.

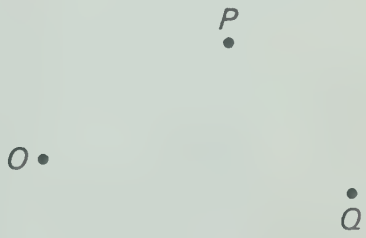
3. Use points *M* and *N* to draw $\overleftrightarrow{MN}$.



4. Draw as many segments as you can connecting points *R*, *S*, *T*, and *U*.

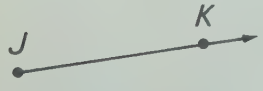


5. Use points *O*, *P*, *Q*, to draw $\angle POQ$.



6. Write the name of each figure using the proper letters and symbols.

A

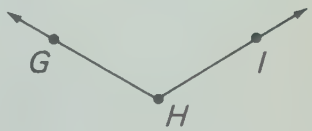


_____

B

_____

C

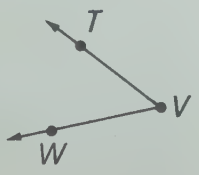


_____

D

_____

E



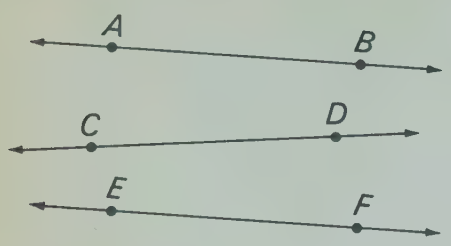
_____

F

_____

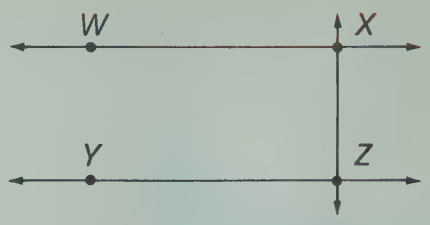
1. Name the lines that are parallel to each other.

A



_____ is parallel to _____

B



_____ is parallel to _____

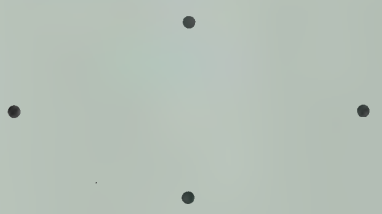
2. Use the points shown to draw the figures named in each part.

A Rectangle

B Parallelogram

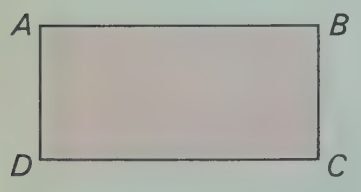
C Square

D Rhombus



3. Name the pairs of parallel segments for each figure below.

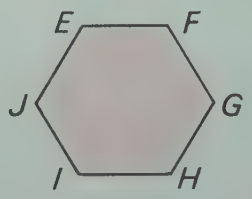
A



_____ is parallel to _____

_____ is parallel to _____

B

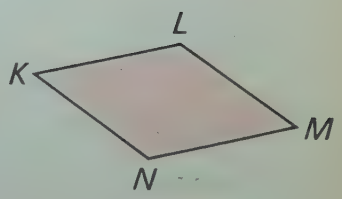


_____ is parallel to _____

_____ is parallel to _____

_____ is parallel to _____

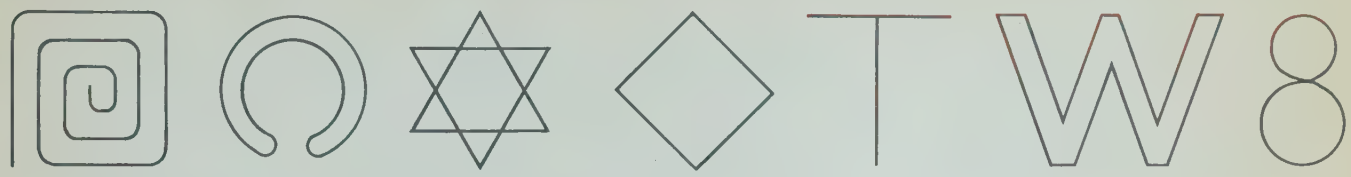
C



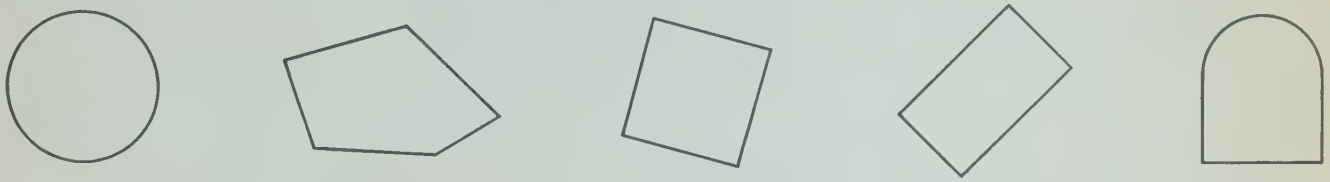
_____ is parallel to _____

_____ is parallel to _____

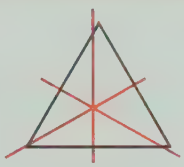
1. Ring the figures that are simple closed curves.



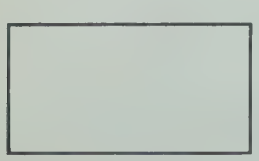
2. Place a √ in each figure that is a quadrilateral.

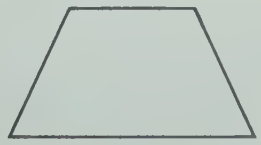


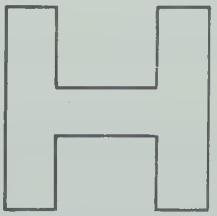
3. Draw as many lines of symmetry as you can for each figure. Then complete parts A and B of the table.

		REGULAR POLYGONS				
		 Triangle	 Square	 Pentagon	 Hexagon	 Octagon
A	Number of sides	3				
B	Lines of symmetry	3	4			

4. Draw as many lines of symmetry as you can for each figure.

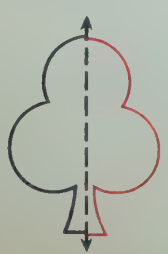
A 

B 

C 

D 

5. Complete the drawing so that the dashed line will be a line of symmetry.

A 

B 

C 

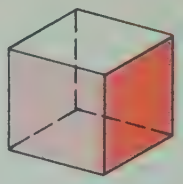
D 

1. Refer to the cube at the right to answer the questions.

   A How many faces? _____

   B How many vertices? _____

   C How many edges? _____

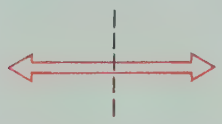
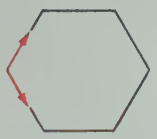


2. Choose the correct word from the list at the left that best describes the figure or a part of a figure shown in color.

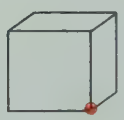
angle
parallel segments
pyramid
quadrilateral
ray
segment
simple closed curve
symmetric figure
vertex

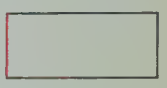


A _____ B _____ C _____


D _____ E _____ F _____

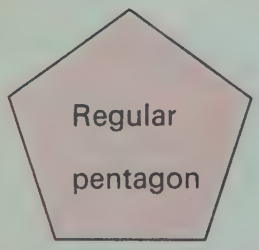




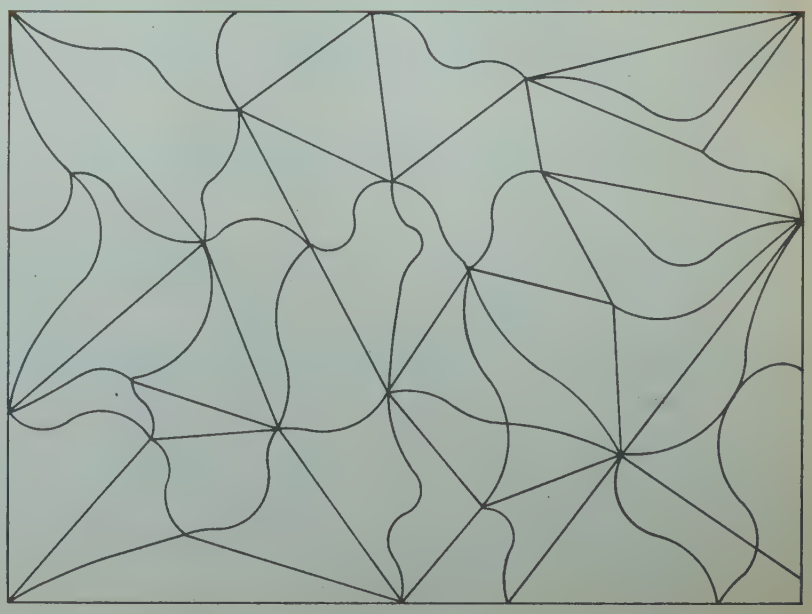
G _____ H _____ I _____

Change of Pace

A regular pentagon is hidden in the figure.



Find the pentagon and color it.



5 Multiplication and Division

Related Operations

1. Give the missing numbers. Then solve the equations.

A 

_____ sets of 4

$3 \times 4 = \square$

$\square \div 3 = 4$

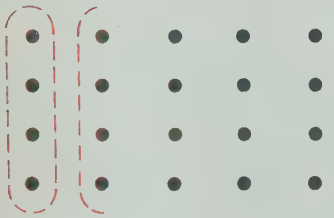
B 

6 sets of _____

$6 \times 3 = \square$

$\square \div 6 = 3$

2. Ring as many sets of 4 as you can.



There are _____ dots in all.

There are _____ sets of 4.

$20 \div 4 = \square$

3. Make as many jumps of 6 as you can.

$6 + 6 + 6 + 6 = \square$

$4 \times 6 = \square$

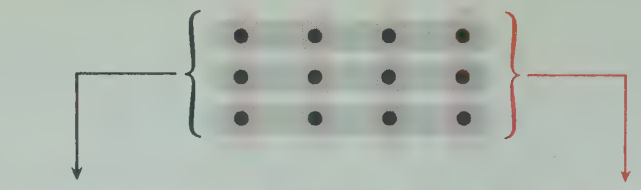
4. Make jumps of 6 from 24 to zero.

$24 - 6 \rightarrow 18 - 6 \rightarrow 12 - 6 \rightarrow 6 - 6$

6 was subtracted _____ times.

$24 \div 6 = \square$

1. Study the sets. Then solve the equations.



3 sets of 4

$3 \times 4 = \square$

4 sets of 3

$4 \times 3 = \square$

$3 \times 4 = 4 \times 3$

2. Find the products.

A Since $8 \times 7 = 56$, we know that $7 \times 8 = \square$.

B Since $6 \times 9 = 54$, we know that $9 \times 6 = \square$.

C Since $5 \times 8 = 40$, we know that $8 \times 5 = \square$.

D Since $7 \times 6 = 42$, we know that $6 \times 7 = \square$.

3. Solve the equations.

A $3 \times 47 = 47 \times \square$

B $56 \times 4 = \square \times 56$

C $\square \times 38 = 38 \times 9$

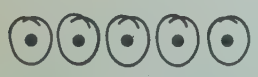
D $14 \times \square = 9 \times 14$

E $64 \times 8 = 8 \times \square$

F $51 \times 7 = \square \times 51$

When we change the **order** of the factors, we get the same product.

4. Solve the equations.



5 sets of 1

1 set of 5

A $5 \times 1 = \square$

B $1 \times 5 = \square$

C $7 \times 1 = \square$

D $1 \times 8 = \square$

E $\square \times 1 = 9$

F $1 \times \square = 6$

The product of any number and 1 is the number itself.

5. Solve the equations.

5 sets of 0

0 sets of 5

A $5 \times 0 = \square$

B $0 \times 5 = \square$

C $7 \times 0 = \square$

D $0 \times 8 = \square$

E $9 \times \square = 0$

F $\square \times 6 = 0$

The product of any number and 0 is 0.

1. Study the sets. Then solve the equations.

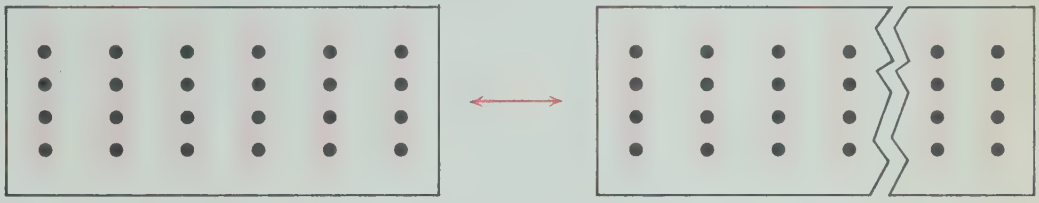
A

We see →  ⟷

We think → 5 threes ⟷ 3 threes and 2 threes

We write → $5 \times 3 = \square$ ⟷ $(3 \times 3) + (2 \times 3) = \square$

B

We see →  ⟷

We think → 6 fours ⟷ 4 fours and 2 fours

We write → $6 \times 4 = \square$ ⟷ $(4 \times 4) + (2 \times 4) = \square$

2. Solve the equations.

A $5 \times 3 = (3 \times 3) + (\square \times 3)$

B $6 \times 4 = (\square \times 4) + (2 \times 4)$

C $7 \times 7 = (4 \times 7) + (\square \times 7)$

D $6 \times 7 = (\square \times 7) + (3 \times 7)$

E $8 \times 3 = (4 \times 3) + (4 \times \square)$

F $5 \times 9 = (2 \times \square) + (3 \times 9)$

G $8 \times 7 = (7 \times 7) + (\square \times 7)$

H $9 \times 3 = (7 \times 3) + (\square \times 3)$

I $8 \times 5 = (\square \times 5) + (3 \times 5)$

J $7 \times 6 = (5 \times 6) + (2 \times \square)$

K $5 \times 9 = (2 \times \square) + (3 \times 9)$

L $6 \times 8 = (1 \times 8) + (\square \times 8)$

3. Solve the equations.

A $3 \times 8 = 24$, $2 \times 8 = 16$ → $5 \times 8 = \square$

B $2 \times 6 = 12$, $5 \times 6 = 30$ → $7 \times 6 = \square$

C $3 \times 7 = 21$, $3 \times 7 = 21$ → $6 \times 7 = \square$

D $4 \times 6 = 24$, $3 \times 6 = 18$ → $7 \times 6 = \square$

1. "0" facts The product of any number and zero is _____.

Complete the **0 row** and **column** of the multiplication table on page 35.

2. "1" facts The product of any number and _____ is that number.

Complete the **1 row** and **column** of the table.

3. "2" facts Solving these equations will help you complete the **2 row** of the table.

A Since $3 + 3 = 6$, we know $2 \times 3 =$ _____.

B Since $5 + 5 = 10$, we know $2 \times 5 =$ _____.

C Complete the **2 row** of the table.

D Since $2 \times 3 = 6$, we know that $3 \times 2 =$ _____.

E Now use the order principle to complete the **2 column**.

4. "3" facts Solving these equations will help you complete the **3 row** of the table.

A $(2 \times 5) + 5 =$ _____ → $3 \times 5 =$ _____

B $(2 \times 4) + 4 =$ _____ → $3 \times 4 =$ _____

C $(2 \times 8) + 8 =$ _____ → $3 \times 8 =$ _____

D Complete the **3 row** of the table.

E Use the order principle to complete the **3 column**.

5. "4" facts Solving these equations will help you complete the **4 row** of the table.

A $(2 \times 7) + (2 \times 7) =$ _____

$4 \times 7 =$ _____

B $(2 \times 9) + (2 \times 9) =$ _____

$4 \times 9 =$ _____

C Complete the **4 row** of the table.

D Use the order principle to complete the **4 column**.

6. "5" facts Solving these equations will help you complete the **5 row** of the table.

A $(4 \times 6) + 6 =$ _____ → $5 \times 6 =$ _____

B $(4 \times 8) + 8 =$ _____ → $5 \times 8 =$ _____

C $(4 \times 5) + 5 =$ _____ → $5 \times 5 =$ _____

D $(4 \times 7) + 7 =$ _____ → $5 \times 7 =$ _____

E Complete the **5 row** of the table.

F Use the order principle to complete the **5 column**.

1. "6" facts Solve these equations.

Then complete the **6 row** and **column.**

A $(3 \times 8) + (3 \times 8) =$ _____

$6 \times 8 =$ _____

B $(3 \times 7) + (3 \times 7) =$ _____

$6 \times 7 =$ _____

C $(3 \times 6) + (3 \times 6) =$ _____

$6 \times 6 =$ _____

D $(3 \times 9) + (3 \times 9) =$ _____

$6 \times 9 =$ _____

MULTIPLICATION TABLE

	0 col	1 col	2 col	3 col	4 col	5 col	6 col	7 col	8 col	9 col
×	0	1	2	3	4	5	6	7	8	9
0 row → 0										
1 row → 1										
2 row → 2										
3 row → 3										
4 row → 4										
5 row → 5										
6 row → 6										
7 row → 7										
8 row → 8										
9 row → 9										

2. "7" facts Solve these equations to help you complete the **7 row** of the table.

A $(6 \times 6) + 6 =$ _____ → $7 \times 6 =$ _____

B $(6 \times 7) + 7 =$ _____ → $7 \times 7 =$ _____

C $(6 \times 8) + 8 =$ _____ → $7 \times 8 =$ _____

D $(6 \times 9) + 9 =$ _____ → $7 \times 9 =$ _____

E Use the order principle to complete the **7 column**.

3. "8" facts Solve these equations. Then complete the **8 row** and **column** of the table.

A $(4 \times 8) + (4 \times 8) =$ _____

$8 \times 8 =$ _____

B $(4 \times 9) + (4 \times 9) =$ _____

$8 \times 9 =$ _____

4. "9" facts Solve these equations. Then complete the table.

A $(6 \times 9) + (3 \times 9) =$ _____ →

B $9 \times 9 =$ _____

1. Give the missing numbers.

When you find this **missing factor**, $\square \times 4 = 28$

you have found this **quotient**. $28 \div 4 = \square$

2. Find each quotient.

A Think ? × 3 = 27

$27 \div 3 = \square$

B Think ? × 5 = 40

$40 \div 5 = \square$

C Think ? × 6 = 24

$24 \div 6 = \square$

D Think ? × 7 = 35

$35 \div 7 = \square$

E Think ? × 4 = 32

$32 \div 4 = \square$

F Think ? × 7 = 49

$49 \div 7 = \square$

3. Find each missing factor and quotient.

A $\square \times 4 = 16$

$16 \div 4 = \square$

B $\square \times 5 = 30$

$30 \div 5 = \square$

C $\square \times 5 = 35$

$35 \div 5 = \square$

D $\square \times 4 = 32$

$32 \div 4 = \square$

E $\square \times 7 = 56$

$56 \div 7 = \square$

F $\square \times 8 = 16$

$16 \div 8 = \square$

G $\square \times 3 = 21$

$21 \div 3 = \square$

H $\square \times 7 = 28$

$28 \div 7 = \square$

I $\square \times 4 = 36$

$36 \div 4 = \square$

J $\square \times 6 = 42$

$42 \div 6 = \square$

K $\square \times 5 = 40$

$40 \div 5 = \square$

L $\square \times 9 = 36$

$36 \div 9 = \square$

1. A Can you find a number that gives 7 when you multiply it by zero? _____

? × 7 = 0

7 ÷ 0 = ☐

B Is it true that any number times zero is zero? _____

? × 0 = 0

0 ÷ 0 = ☐

Since an equation like 7 ÷ 0 = ☐ does not have any solution and the equation 0 ÷ 0 = ☐ does not have any one solution, we never divide by zero.

2. Find each quotient.

A ? × 0 = 7

0 ÷ 7 = ☐

B ? × 3 = 0

0 ÷ 3 = ☐

C ? × 8 = 0

0 ÷ 8 = ☐

Zero divided by any number (other than zero) is zero.

3. Find each quotient.

A ? × 6 = 6

6 ÷ 6 = ☐

B ? × 1 = 9

9 ÷ 1 = ☐

Any number (other than zero) divided by itself is 1.
Any number divided by 1 is that number.

4. Solve the equations.

A 3 ÷ 3 = ☐

B 0 ÷ 6 = ☐

C 8 ÷ 1 = ☐

D 7 ÷ 7 = ☐

E 9 ÷ ☐ = 1

F ☐ ÷ 6 = 0

G 0 ÷ 1 = ☐

H 1 ÷ 1 = ☐

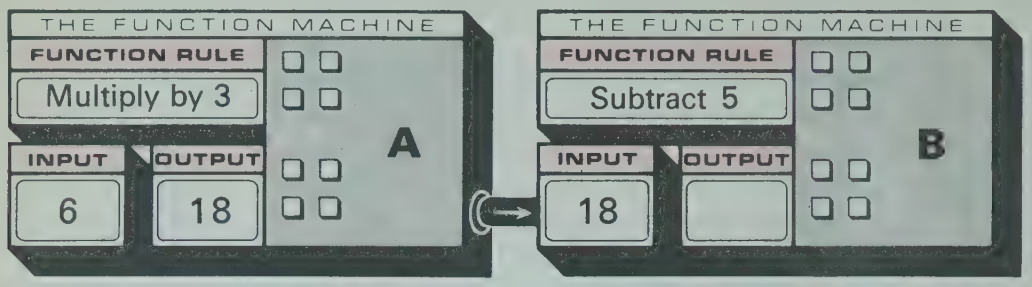
I 5 ÷ ☐ = 5

J 2 ÷ 2 = ☐

K 0 ÷ 3 = ☐

L ☐ ÷ 8 = 0

1. The two function machines are connected. The output for machine A becomes the input for machine B. Give the output for machine B.



For exercises 2 through 9, think about connected function machines and give the missing numbers or rules.

2.

RULE	
A	Multiply by 3
B	Add 2

	INPUT A	OUTPUT B
	2	8
	4	14
A	3	
B	5	
C	6	

3.

RULE	
A	Multiply by 4
B	Divide by 4

	INPUT A	OUTPUT B
	6	6
	9	9
A	8	
B	4	
C	7	

4.

RULE	
A	Add 7
B	Subtract 5

	INPUT A	OUTPUT B
	3	5
	7	9
A	0	
B	3	
C	1	

5.

RULE	
A	Multiply by 2
B	Subtract 4

	INPUT A	OUTPUT B
	6	8
	5	6
A	4	
B	7	
C	2	

6.

	RULE	
A	A	Multiply by 3
	B	Add

	INPUT A	OUTPUT B
	4	14
	7	23
	2	8
B	3	
C	5	

7.

	RULE	
A	A	Divide by 2
	B	Subtract

	INPUT A	OUTPUT B
	14	4
	12	3
	20	7
B	16	
C	10	

8.

	RULE	
A	A	Add 8
	B	Subtract

	INPUT A	OUTPUT B
	7	7
	1	1
B	8	
C	0	
D	6	

9.

	RULE	
A	A	Multiply by
	B	Subtract 0

	INPUT A	OUTPUT B
	6	24
	7	28
	5	20
B	3	
C	9	

Solve the problem. Then write the correct number in the blank.

1. Lily read 23 pages the first day, 48 pages the second day, and only 19 pages the third day. She read

   _____ pages in the three days.

2. Ed paid $4.95 for his tennis shoes and $1.98 for a cap. The shoes cost

   _____ more than the cap.

3. Betty had 40 cents worth of nickels.

   She had _____ nickels.

4. Julie visited her grandmother for 35 days last summer. This was

   _____ weeks.

5. Frank bought seven 8-cent stamps.

   The stamps cost him _____ cents.

6. An ice-cube tray has 3 rows of cubes with 8 cubes in each row.

   The tray holds _____ cubes.

7. A case of soda pop holds 24 bottles. The bottles are in 4 rows. There are

   _____ bottles in each row.

8. Ann weighs 40 kg; Carmen, 37 kg; Laura, 31 kg; and Emilia, 36 kg.

   A The four girls weigh _____ kilograms in all.

   B Carmen weighs _____ kilograms more than Laura.

9. Joe put his coins in stacks of 10. When he finished, he had 7 stacks

   and 8 left over. He had _____ coins.

10. Wilma has some records that play for 5 minutes each. She can play

    _____ records in 45 minutes.

11. There are 31 children in Jean's class. 16 of them are girls. There are

    _____ boys in Jean's class.

12. Kim divided her rock collection equally into 5 boxes. She had 40 rocks.

    She put _____ rocks into each box.

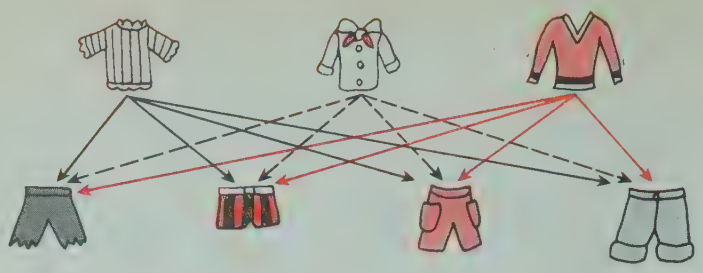
13. Cherie went swimming 4 times a week for 8 weeks. The last 4 weeks of the summer she went only 3 times a week.

    She went swimming _____ times during the summer.

1.

3 shirts

4 pairs of shorts



How many different outfits? _____

3 × 4 = _____

2.

5 kinds of ice cream

How many kinds of sundaes? _____

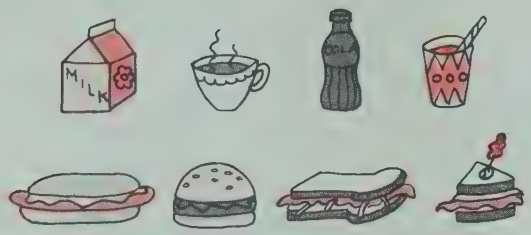
4 kinds of toppings

5 × 4 = _____

3.

4 different drinks

4 different sandwiches

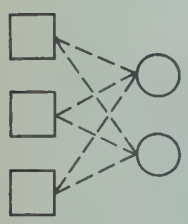


How many different lunches? _____

4 × 4 = _____

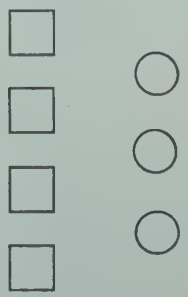
4. Draw lines connecting each square to each circle. Then write a multiplication equation suggested by the pairings.

A



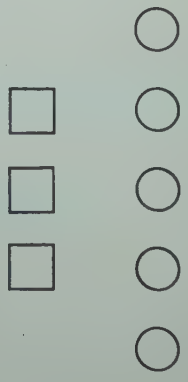
3 × 2 = 6

B



_____

C



_____

1. Write a multiplication and a division equation for this set.

___ × ___ = ___ ÷ 3 = ___

2. Solve the equations.

A Since $8 \times 7 = 56$, $56 \div 7 =$ ☐.

B Since $0 \times 7 = 0$, $0 \div 7 =$ ☐.

C Since $1 \times 7 = 7$, $7 \div 7 =$ ☐.

D Since $7 \times 1 = 7$, $7 \div 1 =$ ☐.

3. Solve the equations.

A $6 \times 4 = (\square \times 4) + (3 \times 4)$

B $5 \times 7 = (3 \times 7) + (2 \times \square)$

C $8 \times 2 = (4 \times 2) + (\square \times 2)$

D $9 \times 7 = (3 \times \square) + (6 \times 6)$

4. Solve the equations.

A $6 \times 7 = \square$ B $48 \div 6 = \square$ C $28 \div \square = 7$ D $5 \times \square = 35$

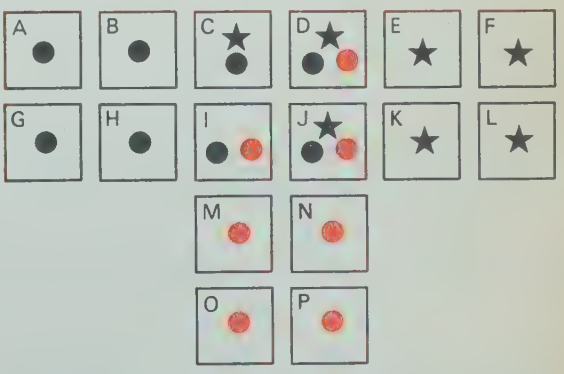
5. Find the quotients.

A $7\overline{)42}$ B $6\overline{)48}$ C $7\overline{)28}$ D $5\overline{)35}$ E $8\overline{)72}$

6. Bought 48 cents worth of 6-cent stamps. How many stamps? ___

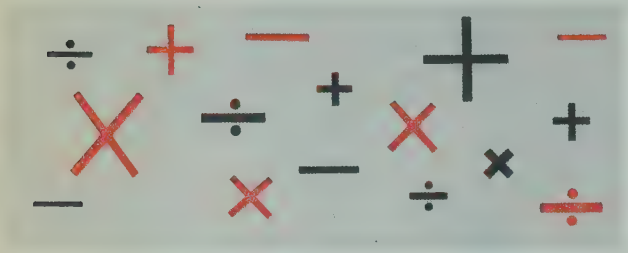
Change of Pace

List the squares that have:



1. A black dot (Answer: ABCDGHIJ)
2. A colored dot ___
3. A star ___
4. A colored dot only ___
5. A colored dot but no star ___
6. Both a black dot and a star ___
7. Both a black dot and a star but not a colored dot ___
8. A colored and a black dot ___

You do not need to give the correct answers to the questions in these problems. Just tell whether you would **add**, **subtract**, **multiply**, or **divide** to find each answer. In exercises 7 through 12, the numbers are covered by screens.



1. Jane had 75 cents. Then she spent 39 cents for a pad of paper. How much did she have left? _____

2. Drew has 53 cents and John has 67 cents. How much do the two boys have together? _____

3. Sue has collected 45 pennies. How many nickels can she get for these pennies? _____

4. Pat pasted 12 stamps on each of 8 pages in his stamp book. How many stamps did he have on these 8 pages? _____

5. Gloria is 74 months old and Sara is 59 months old. How much older is Gloria than Sara? _____

6. One April it rained for 21 straight days. How many weeks was this? _____

7. Jim's older brother plans to be at summer camp for ▒ weeks. How many days is this? _____

8. Lynn has ▒ cents and Mike has ▒ cents.

   A How much do they have in all?

   _____

   B How much more does Lynn have than Mike? _____

9. Mel gave ▒ baseball cards to ▒ friends. Each friend got the same number of cards. How many did each friend get? _____

10. Pam spent ▒ cents on her friends. She bought each of them a soda for ▒ cents each. How many friends had soda? _____

11. After David earned ▒ cents he had ▒ cents. How much did he have before? _____

12. George is ▒ years old today. How many months old is George?

    _____

6 Special Products and Quotients

● *10, 100, and 1000 as Factors*

1. Solve the equations.

A $3 \times 10 =$ _____

B $3 \times 100 =$ _____

C $3 \times 1000 =$ _____

D $6 \times 10 =$ _____

E $6 \times 100 =$ _____

F $6 \times 1000 =$ _____

G $9 \times$ _____ $= 90$

H _____ $\times 100 = 900$

I $9 \times 1000 =$ _____

2. Find the products.

A $4 \times 100 =$ _____

$4 \times (10 \times 10) =$ _____

$(4 \times 10) \times 10 =$ _____

$40 \times 10 =$ _____

B $7 \times 100 =$ _____

$7 \times (10 \times 10) =$ _____

$(7 \times 10) \times 10 =$ _____

$70 \times 10 =$ _____

C $5 \times 1000 =$ _____

$5 \times (10 \times 100) =$ _____

$(5 \times 10) \times 100 =$ _____

$50 \times 100 =$ _____

D $9 \times 1000 =$ _____

$9 \times (10 \times 100) =$ _____

$(9 \times 10) \times 100 =$ _____

$90 \times 100 =$ _____

3. Solve the equations.

A $60 \times 10 =$ _____

B $80 \times 10 =$ _____

C $70 \times$ _____ $= 700$

D _____ $\times 10 = 400$

E $90 \times 100 =$ _____

F $30 \times 100 =$ _____

4. Find the products.

A $40 \times 10 =$ _____

$3 \times 10 =$ _____

$43 \times 10 =$ _____

B $30 \times 100 =$ _____

$5 \times 100 =$ _____

$35 \times 100 =$ _____

C $70 \times 1000 =$ _____

$6 \times 1000 =$ _____

$76 \times 1000 =$ _____

5. Find the products.

A $8 \times 10 =$ _____

B $31 \times 10 =$ _____

C $18 \times 10 =$ _____

D $43 \times 10 =$ _____

E $97 \times 10 =$ _____

F $7 \times 100 =$ _____

G $44 \times 100 =$ _____

H $50 \times 10 =$ _____

I $56 \times 100 =$ _____

J $3 \times 1000 =$ _____

K $27 \times 1000 =$ _____

L $49 \times 1000 =$ _____

1. Find the first product. Then find the other products.

A Since $4 \times 10 =$ _____, we know that $4 \times 100 =$ _____

B Since $19 \times 10) =$ _____, we know that $19 \times 100 =$ _____.

C Since $6 \times 10 =$ _____, we know that $6 \times 100 =$ _____ and

$6 \times 1000 =$ _____.

D Since $51 \times 10 =$ _____, we know that $51 \times 100 =$ _____ and

$51 \times 1000 =$ _____.

2. Find the products.

A
$24 \times 10 =$ _____
$(4 \times 6) \times 10 =$ _____
$4 \times (6 \times 10) =$ _____
$4 \times 60 =$ _____

B
$36 \times 10 =$ _____
$(4 \times 9) \times 10 =$ _____
$4 \times (9 \times 10) =$ _____
$4 \times 90 =$ _____

C
$35 \times 100 =$ _____
$(7 \times 5) \times 100 =$ _____
$7 \times (5 \times 100) =$ _____
$7 \times 500 =$ _____

D
$21 \times 100 =$ _____
$(3 \times 7) \times 100 =$ _____
$3 \times (7 \times 100) =$ _____
$3 \times 700 =$ _____

E
$32 \times 1000 =$ _____
$(8 \times 4) \times 1000 =$ _____
$8 \times (4 \times 1000) =$ _____
$8 \times 4000 =$ _____

F
$27 \times 1000 =$ _____
$(9 \times 3) \times 1000 =$ _____
$9 \times (3 \times 1000) =$ _____
$9 \times 3000 =$ _____

3. Find the products.

A $5 \times 3 =$ _____
B $15 \times 10 =$ _____
C $5 \times 30 =$ _____
D $15 \times 100 =$ _____
E $5 \times 300 =$ _____
F $5 \times 3000 =$ _____
G $3 \times 40 =$ _____
H $12 \times 100 =$ _____
I $4 \times 300 =$ _____
J $3 \times 400 =$ _____
K $30 \times 40 =$ _____
L $12 \times 1000 =$ _____
M $30 \times 8 =$ _____
N $300 \times 6 =$ _____
O $60 \times 90 =$ _____
P $4 \times 700 =$ _____
Q $3 \times 2000 =$ _____
R $8000 \times 7 =$ _____

1. Find the products.

A $7 \times 10 =$ _____

B $43 \times 10 =$ _____

C $90 \times 5 =$ _____

D $6 \times 60 =$ _____

E $30 \times 7 =$ _____

F $8 \times 50 =$ _____

G $4 \times 500 =$ _____

H $600 \times 9 =$ _____

I $700 \times 8 =$ _____

2. Find the missing factors.

A $\square \times 2 = 14$

B $\square \times 2 = 140$

C $\square \times 2 = 1400$

D $\square \times 7 = 35$

E $\square \times 7 = 350$

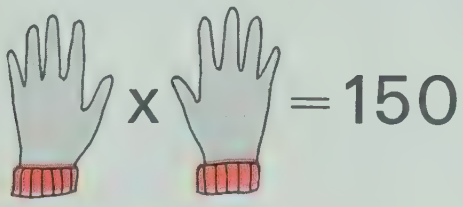
F $\square \times 7 = 3500$

G $\square \times 4 = 240$

H $\square \times 6 = 4200$

I $\square \times 8 = 6400$

3. Fill in the blanks with as many different pairs of factors as you can.

A 

150 × 1 = 150

15 × _____ = 150

3 × _____ = 150

5 × _____ = 150

B 

_____ × _____ = 270

_____ × _____ = 270

_____ × _____ = 270

_____ × _____ = 270

4. Complete the multiplication table.

×	10	20	30	50	80	100	200	400
3								
6								
9								
5								

1. Solve the equations. Solving the first equation should help you solve the second one.

A $\square \times 3 = 12 \rightarrow \square \times 3 = 120$

B $\square \times 5 = 35 \rightarrow \square \times 5 = 350$

C $\square \times 6 = 30 \rightarrow \square \times 6 = 300$

D $\square \times 4 = 24 \rightarrow \square \times 4 = 240$

2. Solve the equations.

A $\square \times 4 = 28$
$\square \times 4 = 280$
$\square \times 40 = 280$

B $\square \times 5 = 35$
$\square \times 5 = 350$
$\square \times 50 = 350$

C $\square \times 7 = 21$
$\square \times 7 = 210$
$\square \times 70 = 210$

3. First find the missing factor. Then find the quotient.

A $\square \times 3 = 120$
$120 \div 3 = \square$

B $\square \times 8 = 160$
$160 \div 8 = \square$

C $\square \times 4 = 200$
$200 \div 4 = \square$

D $\square \times 40 = 160$
$160 \div 40 = \square$

E $\square \times 20 = 180$
$180 \div 20 = \square$

F $\square \times 50 = 250$
$250 \div 50 = \square$

G $\square \times 8 = 2400$
$2400 \div 8 = \square$

H $\square \times 30 = 240$
$240 \div 30 = \square$

I $\square \times 7 = 3500$
$3500 \div 7 = \square$

4. Find the quotients.

A $100 \div 2 =$ _____
B $120 \div 3 =$ _____
C $140 \div 7 =$ _____
D $240 \div 30 =$ _____
E $160 \div 40 =$ _____
F $350 \div 50 =$ _____
G $2700 \div 9 =$ _____
H $4200 \div 6 =$ _____
I $4000 \div 8 =$ _____

5. Find the quotients.

A $3\overline{)180}$
B $5\overline{)100}$
C $4\overline{)360}$
D $8\overline{)480}$
E $40\overline{)240}$
F $70\overline{)4900}$
G $5\overline{)4500}$
H $9\overline{)7200}$

1. Find the products.

A

$24 \times 100 =$ _____

$(4 \times 6) \times 100 =$ _____

$(4 \times 6) \times (10 \times 10) =$ _____

$(4 \times 10) \times (6 \times 10) =$ _____

$40 \times 60 =$ _____

B

$35 \times 100 =$ _____

$(5 \times 7) \times 100 =$ _____

$(5 \times 7) \times (10 \times 10) =$ _____

$(5 \times 10) \times (7 \times 10) =$ _____

$50 \times 70 =$ _____

2. Find the products.

A $30 \times 40 =$ _____

B $50 \times 30 =$ _____

C $70 \times 20 =$ _____

D $80 \times 30 =$ _____

E $60 \times 50 =$ _____

F $40 \times 70 =$ _____

G $50 \times 50 =$ _____

H $70 \times 30 =$ _____

I $90 \times 20 =$ _____

J $20 \times 80 =$ _____

K $30 \times 60 =$ _____

L $40 \times 40 =$ _____

3. Find the missing factor. Then find the quotient.

A $\square \times 20 = 1400$
$1400 \div 20 = \square$

B $\square \times 50 = 2500$
$2500 \div 50 = \square$

C $\square \times 80 = 1600$
$1600 \div 80 = \square$

D $\square \times 50 = 3000$
$3000 \div 50 = \square$

E $\square \times 30 = 1500$
$1500 \div 30 = \square$

F $\square \times 40 = 1600$
$1600 \div 40 = \square$

G $\square \times 70 = 2800$
$2800 \div 70 = \square$

H $\square \times 40 = 1200$
$1200 \div 40 = \square$

I $\square \times 20 = 1800$
$1800 \div 20 = \square$

4. Find the quotients.

A $10 \overline{)\ 900}$

B $30 \overline{)\ 1800}$

C $20 \overline{)\ 800}$

D $40 \overline{)\ 2800}$

E $80 \overline{)\ 1600}$

F $40 \overline{)\ 3600}$

G $80 \overline{)\ 5600}$

H $90 \overline{)\ 6300}$

1. Find the products.

A $7 \times 10 =$ _____

B $6 \times 100 =$ _____

C $23 \times 10 =$ _____

D $65 \times 10 =$ _____

E $10 \times 37 =$ _____

F $60 \times 3 =$ _____

G $2 \times 70 =$ _____

H $30 \times 40 =$ _____

I $60 \times 20 =$ _____

2. Find the quotients.

A $70 \div 7 =$ ___

B $800 \div 8 =$ ___

C $500 \div 5 =$ ___

D $360 \div 10 =$ ___

E $320 \div 8 =$ ___

F $240 \div 6 =$ ___

G $150 \div 30 =$ ___

H $280 \div 40 =$ ___

I $300 \div 50 =$ ___

3. Find the quotients.

A $6\overline{)600}$

B $4\overline{)40}$

C $8\overline{)240}$

D $2\overline{)140}$

E $5\overline{)2000}$

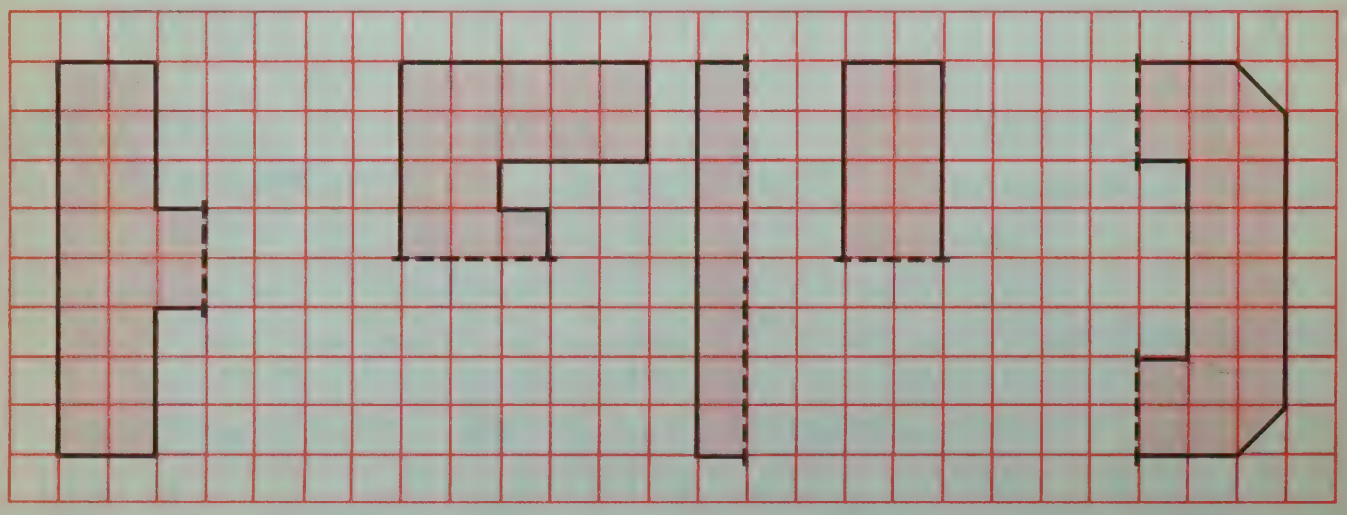
F $4\overline{)1600}$

G $30\overline{)2400}$

H $20\overline{)1200}$

Change of Pace

Draw and color the other half of each figure to form a **symmetric** figure.



7 Estimation

Estimating

1. Answer true (**T**) or false (**F**).

A The number for A is closer to 30 than to 40. _____

B The number for B is closer to 30 than to 40. _____

C The number for C is closer to 50 than to 40. _____

D The number for D is closer to 50 than to 60. _____

E The number for E is closer to 60 than to 70. _____

2. Use the closest multiples of 100 to fill in the blanks.

A The number for A is between 200 and _____.

It is closer to 300 than it is to _____.

B The number for B is between _____ and _____.

It is closer to _____ than it is to _____.

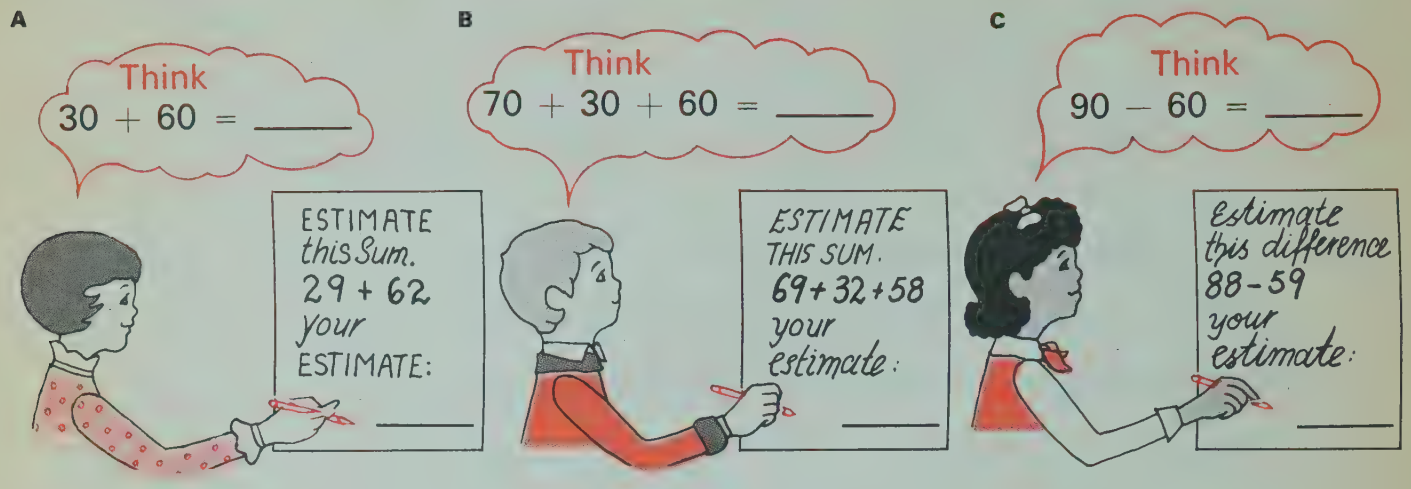
C The number for C is closer to _____ than it is to _____.

D The number for D is closer to _____ than it is to _____.

3. The number shown in color is closer to one of the multiples of 10 or 100 than it is to the other. Put a ring around the one it is closer to.

A	(20), 23, 30	G	80, 83, 90	M	700, 738, 800
B	40, 47, (50)	H	40, 42, 50	N	400, 426, 500
C	90, 91, 100	I	60, 66, 70	O	800, 888, 900
D	30, 38, 40	J	100, 123, 200	P	300, 374, 400
E	50, 52, 60	K	300, 387, 400	Q	200, 256, 300
F	70, 76, 80	L	800, 827, 900	R	400, 437, 500

1. Give an estimate for the sum or difference.



2. Give the multiples of 10 or 100 that are closest to the numbers in the problem. Then give an estimate for the sum.

A
$$\begin{array}{rl} 39 & \rightarrow 40 \\ +\ 23 & \rightarrow 20 \\ \hline \text{Estimate} & \rightarrow 60 \end{array}$$

B
$$\begin{array}{rl} 51 & \rightarrow \square \\ +\ 28 & \rightarrow \square \\ \hline \text{Estimate} & \rightarrow \square \end{array}$$

C
$$\begin{array}{rl} 61 & \rightarrow \square \\ +\ 19 & \rightarrow \square \\ \hline \text{Estimate} & \rightarrow \square \end{array}$$

D
$$\begin{array}{rl} 121 & \rightarrow 100 \\ +\ 394 & \rightarrow 400 \\ \hline \text{Estimate} & \rightarrow \square \end{array}$$

E
$$\begin{array}{rl} 437 & \rightarrow \square \\ 226 & \rightarrow \square \\ 767 & \rightarrow \square \\ +\ 191 & \rightarrow \square \\ \hline \text{Estimate} & \rightarrow \square \end{array}$$

3. Give the multiples of 10 or 100 that are closest to the numbers in the problem. Then give an estimate for the difference.

A
$$\begin{array}{rl} 72 & \rightarrow \square \\ -\ 39 & \rightarrow \square \\ \hline \text{Estimate} & \rightarrow \square \end{array}$$

B
$$\begin{array}{rl} 615 & \rightarrow \square \\ -\ 199 & \rightarrow \square \\ \hline \text{Estimate} & \rightarrow \square \end{array}$$

C
$$\begin{array}{rl} 831 & \rightarrow \square \\ -\ 196 & \rightarrow \square \\ \hline \text{Estimate} & \rightarrow \square \end{array}$$

4. Give the closest multiple of 10 or 100 for the sum or difference.

A 43 + 16 _____ B 79 − 31 _____ C 379 + 211 _____

1. Give the multiple of 10 or 100 that is closest to the larger factor.
Then give an estimate for the product.

A
$78 \rightarrow 80$
$\times 6 \rightarrow 6$
Estimate $\rightarrow 480$

C
$39 \rightarrow$ ____
$\times 7 \rightarrow 7$
Estimate $\rightarrow$ ____

E
$106 \rightarrow$ ____
$\times 24 \rightarrow 24$
Estimate $\rightarrow$ ____

B
$61 \rightarrow$ ____
$\times 4 \rightarrow 4$
Estimate $\rightarrow$ ____

D
$217 \rightarrow$ ____
$\times 9 \rightarrow 9$
Estimate $\rightarrow$ ____

F
$78 \rightarrow$ ____
$\times 39 \rightarrow 40$
Estimate $\rightarrow$ ____

2. Give an estimate for each product.

A $4 \times 39 \rightarrow 160$
B $7 \times 21 \rightarrow$ _____
C $3 \times 47 \rightarrow$ _____

D $4 \times 695 \rightarrow 2800$
E $9 \times 287 \rightarrow$ _____
F $6 \times 304 \rightarrow$ _____

G $69 \times 33 \rightarrow 2100$
H $72 \times 19 \rightarrow$ _____
I $58 \times 41 \rightarrow$ _____

3. For each ____, give the multiple of 10 that is closest to each dividend.

Then for each ____, give an estimate for the quotient.

A
$6\overline{)239}$
$\downarrow$
$6\overline{)240}$
40

B
$7\overline{)347}$
$\downarrow$
$7\overline{)\ \ }$
____

C
$8\overline{)163}$
$\downarrow$
$8\overline{)\ \ }$
____

D
$4\overline{)276}$
$\downarrow$
$4\overline{)\ \ }$
____

4. Put a ring around the best estimate for the quotient.

A $2\overline{)78}$ 20, 40, 60
B $7\overline{)371}$ 10, 50, 500
C $6\overline{)108}$ 20, 30, 40
D $8\overline{)418}$ 40, 50, 60
E $3\overline{)297}$ 80, 90, 100

F $7\overline{)434}$ 60, 70, 80
G $6\overline{)318}$ 30, 40, 50
H $8\overline{)176}$ 10, 20, 30
I $9\overline{)729}$ 70, 80, 90
J $3\overline{)267}$ 70, 80, 90

1. Match the numbers with the closest multiple of 10 or 100.

A	61	30	G	298	200
B	49	40	H	614	300
C	76	50	I	184	400
D	28	60	J	720	500
E	37	70	K	390	600
F	72	80	L	486	700

2. Estimate the sums, differences, products, and quotients.

A $68 + 13$ _____

B $198 + 410$ _____

C $47 - 29$ _____

D $602 - 199$ _____

E 99×3 _____

F 398×4 _____

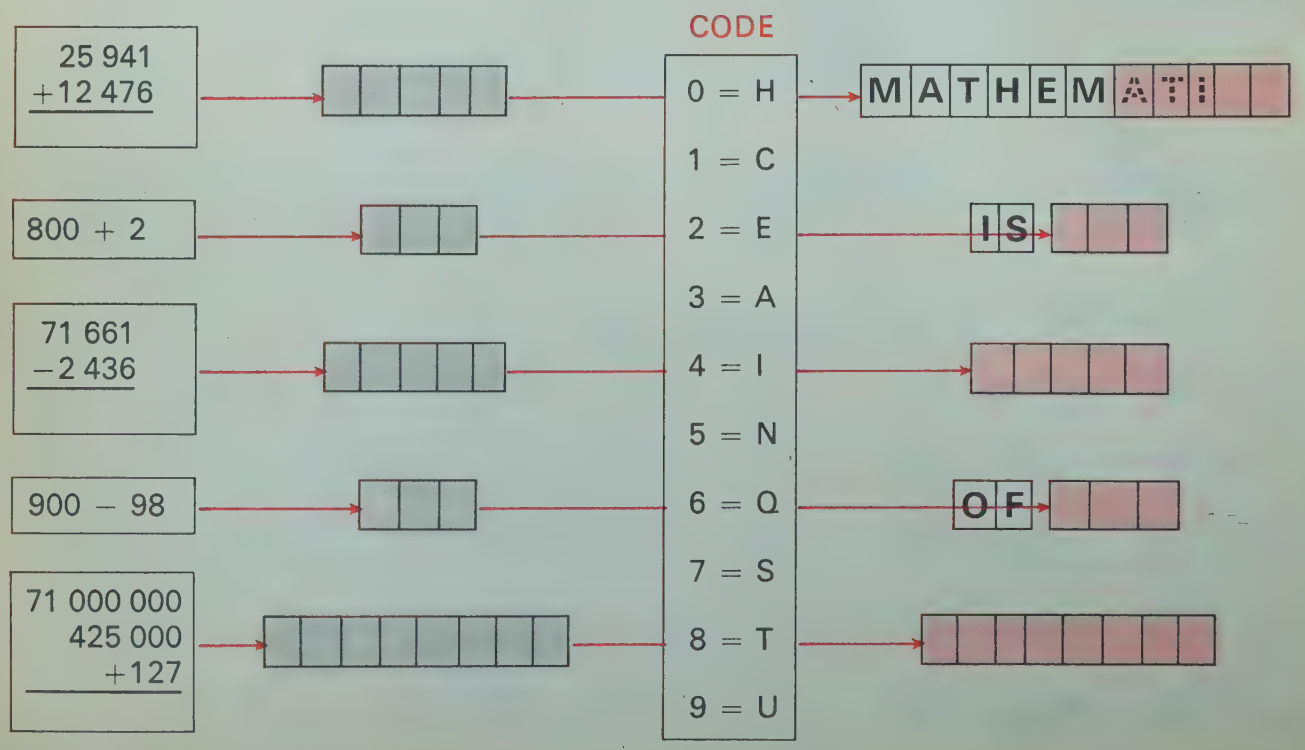
G $158 \div 2$ _____

H $255 \div 5$ _____

I $357 \div 9$ _____

Change of Pace

Work the exercises and write your answers in the gray squares. Then use the code to get letters for the colored squares. If you do your work carefully you will have a quotation by Karl Friedrich Gauss, a famous mathematician.

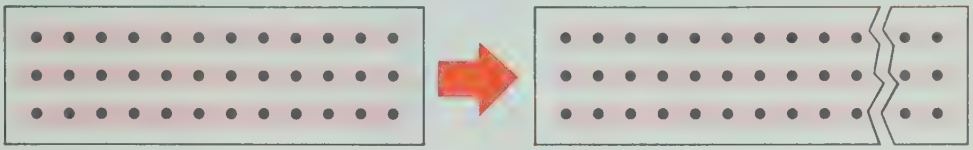


8 Multiplying

The Multiplication-Addition Principle

1. Study the sets. Then solve the equations.

You can "break apart" one of the factors when you multiply.

We see: 

We think: 3 twelves 3 tens and 3 twos

We write: $3 \times 12 = (3 \times \underline{10}) + (3 \times \underline{\quad})$

2. Solve the equations.

A $4 \times 16 = (4 \times 10) + \left(4 \times \square\right)$

B $8 \times 36 = \left(8 \times \square\right) + (8 \times 6)$

C $5 \times 23 = \left(5 \times \square\right) + (5 \times 3)$

D $5 \times 92 = (5 \times 90) + \left(5 \times \square\right)$

3. Find the sums and products.

A
$6 \times 20 = \underline{\quad}$
$6 \times 3 = \underline{\quad}$
$6 \times 23 = \underline{\quad}$

B
$3 \times 40 = \underline{\quad}$
$3 \times 2 = \underline{\quad}$
$3 \times 42 = \underline{\quad}$

C
$4 \times 60 = \underline{\quad}$
$4 \times 3 = \underline{\quad}$
$4 \times 63 = \underline{\quad}$

D
$2 \times 30 = \underline{\quad}$
$2 \times 7 = \underline{\quad}$
$2 \times 37 = \underline{\quad}$

E
$6 \times 50 = \underline{\quad}$
$6 \times 1 = \underline{\quad}$
$6 \times 51 = \underline{\quad}$

F
$5 \times 70 = \underline{\quad}$
$5 \times 4 = \underline{\quad}$
$5 \times 74 = \underline{\quad}$

4. Find the products for each ▭. Then add the products and write the sum in the ▭.

A

×	3
80	
3	
83	

B

×	6
70	
4	
74	

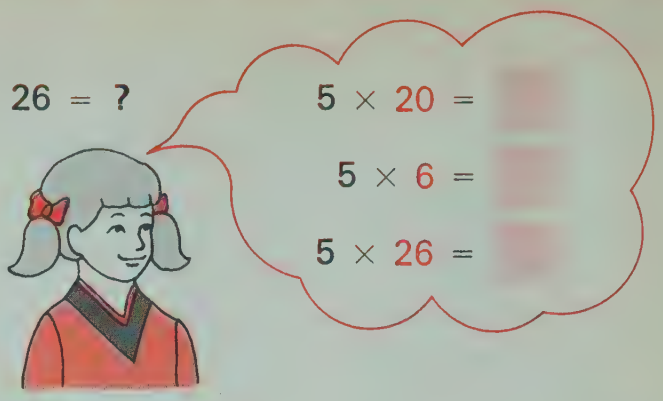
C

×	9
60	
7	
67	

D

×	4
200	
30	
8	
238	

1. In the picture Sue is finding the product 5 × 26 by "breaking apart" the 26. Write the correct product in each ☐ to show her thinking.



2. Write the correct product in each ☐.

A

$$\begin{array}{r} 72 \\ \times\ 4 \\ \hline \square \leftarrow 4 \times 2 \\ 280 \leftarrow 4 \times 70 \\ \hline 288 \leftarrow 4 \times 72 \end{array}$$

B

$$\begin{array}{r} 69 \\ \times\ 5 \\ \hline \square \leftarrow 5 \times 9 \\ \square \leftarrow 5 \times 60 \\ \hline \square \leftarrow 5 \times 69 \end{array}$$

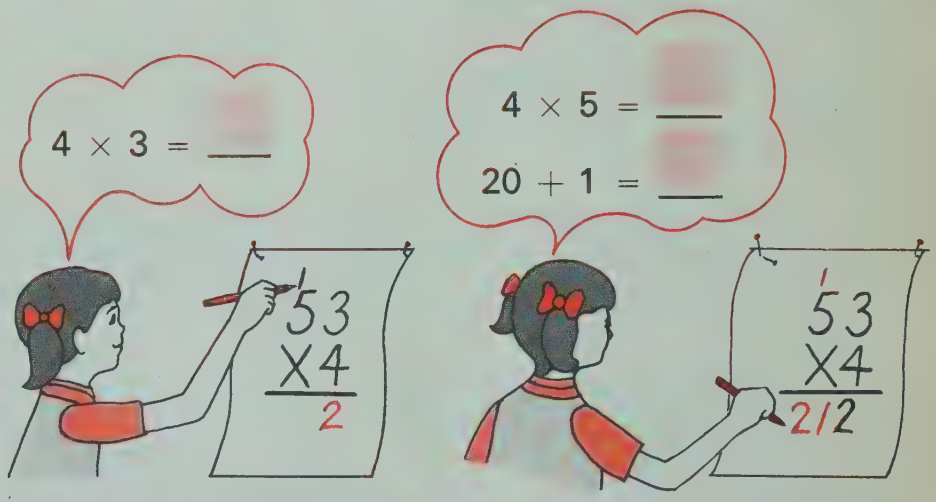
C

$$\begin{array}{r} 37 \\ \times\ 6 \\ \hline \square \leftarrow 6 \times 7 \\ \square \leftarrow 6 \times 30 \\ \hline \square \leftarrow 6 \times 37 \end{array}$$

D

$$\begin{array}{r} 98 \\ \times\ 7 \\ \hline \square \leftarrow 7 \times 8 \\ \square \leftarrow 7 \times 90 \\ \hline \square \leftarrow 7 \times 98 \end{array}$$

3. Jane is using a shortcut to find the product 53 × 4. Write the correct product in each ☐ to show her thinking. Then see how she shows her work.



4. Find the products.

A $\begin{array}{r} 42 \\ \times\ 6 \\ \hline \end{array}$	**B** $\begin{array}{r} 83 \\ \times\ 4 \\ \hline \end{array}$	**C** $\begin{array}{r} 35 \\ \times\ 5 \\ \hline \end{array}$	**D** $\begin{array}{r} 57 \\ \times\ 3 \\ \hline \end{array}$	**E** $\begin{array}{r} 46 \\ \times\ 4 \\ \hline \end{array}$	**F** $\begin{array}{r} 19 \\ \times\ 8 \\ \hline \end{array}$
G $\begin{array}{r} 54 \\ \times\ 7 \\ \hline \end{array}$	**H** $\begin{array}{r} 71 \\ \times\ 9 \\ \hline \end{array}$	**I** $\begin{array}{r} 25 \\ \times\ 6 \\ \hline \end{array}$	**J** $\begin{array}{r} 39 \\ \times\ 5 \\ \hline \end{array}$	**K** $\begin{array}{r} 80 \\ \times\ 8 \\ \hline \end{array}$	**L** $\begin{array}{r} 42 \\ \times\ 5 \\ \hline \end{array}$

1. Write the correct product in each

A

$$\begin{array}{r} 835 \\ \times\ 4 \\ \hline \\ \\ \\ \hline \end{array}$$

← 4 × 5
← 4 × 30
← 4 × 800
← 4 × 835

B

$$\begin{array}{r} 507 \\ \times\ 3 \\ \hline \\ \\ \\ \hline \end{array}$$

← 3 × 7
← 3 × 0
← 3 × 500
← 3 × 507

C

$$\begin{array}{r} 460 \\ \times\ 9 \\ \hline \\ \\ \\ \hline \end{array}$$

← 9 × 0
← 9 × 60
← 9 × 400
← 9 × 460

2. A shortcut is used in the problems below. Give the correct digit for each .

A

4 × 8 = 32

$$\begin{array}{r} \overset{3}{4}38 \\ \times\ 4 \\ \hline \overset{2}{\square}2 \end{array}$$

4 × 3 = 12
12 + 3 = 15

$$\begin{array}{r} 4\overset{3}{3}8 \\ \times\ 4 \\ \hline 2 \end{array}$$

4 × 4 = 16
16 + 1 = 17

$$\begin{array}{r} \overset{1}{4}\overset{3}{3}8 \\ \times\ 4 \\ \hline 52 \end{array}$$

B

6 × 4 = 24

$$\begin{array}{r} 5374 \\ \times\ 6 \\ \hline \end{array}$$

6 × 7 = 42
42 + 2 = 44

$$\begin{array}{r} 53\overset{2}{7}4 \\ \times\ 6 \\ \hline 4 \end{array}$$

6 × 3 = 18
18 + 4 = 22

$$\begin{array}{r} 5\overset{4}{3}\overset{2}{7}4 \\ \times\ 6 \\ \hline \overset{2}{\square}44 \end{array}$$

6 × 5 = 30
30 + 2 = 32

$$\begin{array}{r} \overset{2}{5}\overset{4}{3}\overset{2}{7}4 \\ \times\ 6 \\ \hline 244 \end{array}$$

3. Find the products.

A $\begin{array}{r} 395 \\ \times\ 5 \\ \hline \end{array}$ **B** $\begin{array}{r} 416 \\ \times\ 6 \\ \hline \end{array}$ **C** $\begin{array}{r} 748 \\ \times\ 3 \\ \hline \end{array}$ **D** $\begin{array}{r} 876 \\ \times\ 7 \\ \hline \end{array}$ **E** $\begin{array}{r} 397 \\ \times\ 5 \\ \hline \end{array}$ **F** $\begin{array}{r} 850 \\ \times\ 9 \\ \hline \end{array}$

G $\begin{array}{r} 206 \\ \times\ 6 \\ \hline \end{array}$ **H** $\begin{array}{r} 352 \\ \times\ 4 \\ \hline \end{array}$ **I** $\begin{array}{r} 2865 \\ \times\ 3 \\ \hline \end{array}$ **J** $\begin{array}{r} 4237 \\ \times\ 5 \\ \hline \end{array}$ **K** $\begin{array}{r} 9345 \\ \times\ 7 \\ \hline \end{array}$ **L** $\begin{array}{r} 3475 \\ \times\ 6 \\ \hline \end{array}$

1. Solve the equations.

A $20 \times 34 = \boxed{10} \times 2 \times 34$

B $30 \times 82 = 10 \times \square \times 82$

C $40 \times 56 = 10 \times 4 \times \square$

D $\square \times 23 = 10 \times 5 \times 23$

2. Solve the equations.

A Since $3 \times 82 =$ _____, we know that $30 \times 82 =$ _____.

B Since $4 \times 56 =$ _____, we know that $40 \times 56 =$ _____.

3. Fill the blanks.

A To multiply by 20, multiply by 2 and then multiply by _____.

B To multiply by 30, multiply by _____ and then multiply by 10.

C To multiply by 40, multiply by 4 and then multiply by _____.

D To multiply by 90, multiply by _____ and then multiply by _____.

E To multiply by _____, multiply by 6 and then multiply by 10.

4. Write the correct digit in each .

A
1. Write the product 3×56.

$$\begin{array}{r} 56 \\ \times\ 30 \\ \hline \end{array}$$

2. Multiply by 10.

$$\begin{array}{r} 56 \\ \times\ 30 \\ \hline 168 \end{array}$$

B
1. Write the product 4×76.

$$\begin{array}{r} 76 \\ \times\ 40 \\ \hline \end{array}$$

2. Multiply by 10.

$$\begin{array}{r} 76 \\ \times\ 40 \\ \hline 304 \end{array}$$

5. Find the products.

A $\begin{array}{r} 39 \\ \times\ 20 \\ \hline \end{array}$ B $\begin{array}{r} 24 \\ \times\ 50 \\ \hline \end{array}$ C $\begin{array}{r} 57 \\ \times\ 40 \\ \hline \end{array}$ D $\begin{array}{r} 49 \\ \times\ 30 \\ \hline \end{array}$ E $\begin{array}{r} 35 \\ \times\ 60 \\ \hline \end{array}$ F $\begin{array}{r} 28 \\ \times\ 90 \\ \hline \end{array}$

G $\begin{array}{r} 64 \\ \times\ 80 \\ \hline \end{array}$ H $\begin{array}{r} 59 \\ \times\ 40 \\ \hline \end{array}$ I $\begin{array}{r} 95 \\ \times\ 70 \\ \hline \end{array}$ J $\begin{array}{r} 63 \\ \times\ 90 \\ \hline \end{array}$ K $\begin{array}{r} 85 \\ \times\ 50 \\ \hline \end{array}$ L $\begin{array}{r} 67 \\ \times\ 60 \\ \hline \end{array}$

1. Write the correct digit in each ▢.

A

$$\begin{array}{r} 67 \\ \times\ 24 \\ \hline \end{array}$$

67 × 4

$$\begin{array}{r} 67 \\ \times\ 24 \\ \hline 268 \\ \hline \end{array}$$

67 × 20

$$\begin{array}{r} 67 \\ \times\ 24 \\ \hline 268 \\ 1340 \\ \hline \end{array}$$

67 × 24

B

$$\begin{array}{r} 36 \\ \times\ 23 \\ \hline \end{array}$$

36 × 3

36 × 20

36 × 23

C

$$\begin{array}{r} 54 \\ \times\ 46 \\ \hline \end{array}$$

54 × 6

54 × 40

54 × 46

D

$$\begin{array}{r} 72 \\ \times\ 25 \\ \hline \end{array}$$

72 × 5

72 × 20

72 × 25

2. Find the products.

A $\begin{array}{r} 52 \\ \times\ 34 \\ \hline \end{array}$ **B** $\begin{array}{r} 28 \\ \times\ 16 \\ \hline \end{array}$ **C** $\begin{array}{r} 45 \\ \times\ 60 \\ \hline \end{array}$ **D** $\begin{array}{r} 38 \\ \times\ 25 \\ \hline \end{array}$ **E** $\begin{array}{r} 83 \\ \times\ 37 \\ \hline \end{array}$ **F** $\begin{array}{r} 64 \\ \times\ 63 \\ \hline \end{array}$

G $\begin{array}{r} 75 \\ \times\ 24 \\ \hline \end{array}$ **H** $\begin{array}{r} 54 \\ \times\ 47 \\ \hline \end{array}$ **I** $\begin{array}{r} 92 \\ \times\ 36 \\ \hline \end{array}$ **J** $\begin{array}{r} 23 \\ \times\ 67 \\ \hline \end{array}$ **K** $\begin{array}{r} 18 \\ \times\ 91 \\ \hline \end{array}$ **L** $\begin{array}{r} 65 \\ \times\ 49 \\ \hline \end{array}$

Find the products.

1. 42×3	**2.** 56×4	**3.** 39×6	**4.** 78×5	**5.** 96×8
6. 815×7	**7.** 509×6	**8.** 625×9	**9.** 729×8	**10.** 870×4
11. 67×80	**12.** 89×40	**13.** 64×94	**14.** 95×76	**15.** 775×85

Change of Pace

Here is a math "trick" that will help you find a person's age and the day of the month on which he was born. Like most tricks, it is possible to tell why it works. You will probably not be able to explain this trick until after you have studied algebra. Right now you can have fun using the trick to surprise your friends.

Suppose your friend is **12** years old and his birthday is April **23**.
Ask your friend to secretly:

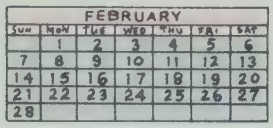
1. Multiply his age by 4. ⟶ $4 \times \mathbf{12} = 48$
2. Add 10. ⟶ $48 + 10 = 58$
3. Multiply by 25. ⟶ $58 \times 25 = 1450$
4. Subtract the number of days in a year (365). ⟶ $1450 - 365 = 1085$
5. Add the day of his birthday. ⟶ $1085 + \mathbf{23} = 1108$
6. Add 115. ⟶ $1108 + 115 = \underbrace{\mathbf{12}}_{\text{age}}\underbrace{\mathbf{23}}_{\text{date}}$

When your friend gives you the answer, use the first 2 digits to tell your friend's age and the last two digits to tell the day of the month on which he was born.

Check this trick, using your own age and birthdate. Try this trick on a friend.

1. There are 365 days in an ordinary year. How many days are in 3 years?

_____



2. There are 24 candy bars in a box. If a store buys 8 boxes, how many candy bars does it have? _____

3. Tom had 9 quarters. How many cents are they worth? _____

4. 60 seconds is the same amount of time as 1 minute. How many seconds are in 24 minutes? _____

5. There are 1000 metres in a kilometre. How many metres are in 6 kilometres? _____

6. Mr. Jones sold 12 dozen eggs. There are 12 eggs in a dozen. How many eggs did he sell? _____

7. If a dozen eggs cost 37¢, how much do 12 dozen eggs cost? _____

8. Each workbook has 96 pages. 4 workbooks. How many pages? _____

9. If the average number of pupils in a classroom is 23 and there are 57 classrooms in a city, how many pupils are there in the school system? _____

10. Each box contains 24 Christmas tree bulbs. If you need 100 bulbs, will 4 boxes be enough?

_____

11. There are 43 rows of chairs with 25 chairs in each row. How many chairs in all? _____

12. An automobile uses 1 litre of gasoline to go 6 km. At this rate, how far can it go while using 63 litres of gasoline? _____

13. If an auto could travel 54 kilometres per hour for 24 hours, how far would it go? _____

14. Sue's sister, Joan, spent 23 hours one week as a baby sitter. If Joan earned 45 cents an hour, how much was her total pay? _____

1. Write the correct digit in each ▢.

	Step 1	Step 2	Step 3	Step 4
A	Think 426 × **2**	Think 426 × **70**	Think 426 × **300**	Think 852 29 820 + 127 800
	426 × 37**2**	426 × 3**7**2 852	426 × **3**72 852 29820	426 × 372 852 29820 127800
B	Think 324 × **6**	Think 324 × **200**	Think 1944 + 64 800	
	324 × 20**6**	324 × **2**06 1944	324 × 206 1944 64800	

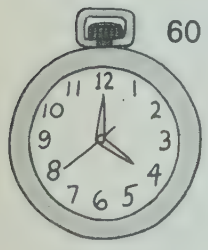
2. Find the products.

A 199 × 487	**B** 507 × 924	**C** 480 × 675	**D** 951 × 403	**E** 769 × 222
F 644 × 394	**G** 343 × 707	**H** 928 × 652	**I** 805 × 999	**J** 539 × 806

Find the products.

1. 75 × 4	**2.** 29 × 8	**3.** 38 × 5	**4.** 92 × 40	**5.** 87 × 30
6. 17 × 24	**7.** 49 × 35	**8.** 86 × 81	**9.** 50 × 27	**10.** 66 × 39
11. 942 × 31	**12.** 256 × 300	**13.** 463 × 527	**14.** 808 × 795	**15.** 719 × 906

Short Stories—Time



60 seconds (s) = 1 minute
60 minutes = 1 hour
24 hours = 1 day
7 days = 1 week

52 weeks = 1 year
12 months = 1 year
365 days = 1 year
366 days = 1 leap year

FEBRUARY						
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28						

1. 5 days. How many hours? _____

2. Sleep 8 hours. How many minutes? _____

3. 1 week. How many hours? _____

4. 3 years plus 1 leap year. How many days? _____

5. 13 years old. How many months old? _____

6. School lasts 36 weeks. How many days? _____

7. 1 day. How many minutes? _____

8. 31 days. How many hours? _____

1. Solve the equations.

A $4 \times 27 = (4 \times 20) + (4 \times \square)$

B $6 \times 46 = (6 \times 40) + (6 \times \square)$

C $30 \times 48 = 10 \times \square \times 48$

D $97 \times 50 = 97 \times 5 \times \square$

E $5 \times 936 = (5 \times 900) + (5 \times \square) + (5 \times 6)$

2. Find the products.

A $\begin{array}{r} 74 \\ \times\ 5 \\ \hline \end{array}$

B $\begin{array}{r} 81 \\ \times\ 9 \\ \hline \end{array}$

C $\begin{array}{r} 53 \\ \times\ 70 \\ \hline \end{array}$

D $\begin{array}{r} 95 \\ \times\ 35 \\ \hline \end{array}$

E $\begin{array}{r} 44 \\ \times\ 88 \\ \hline \end{array}$

F $\begin{array}{r} 353 \\ \times\ 38 \\ \hline \end{array}$

G $\begin{array}{r} 101 \\ \times\ 54 \\ \hline \end{array}$

H $\begin{array}{r} 787 \\ \times\ 46 \\ \hline \end{array}$

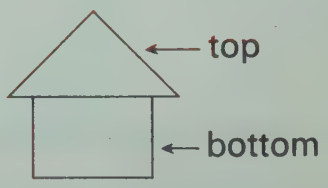
I $\begin{array}{r} 399 \\ \times\ 467 \\ \hline \end{array}$

J $\begin{array}{r} 725 \\ \times\ 602 \\ \hline \end{array}$

3. It took 24 egg shells for each fourth-grader's art project this week. There were 33 pupils in the class. How many egg shells were used in all? _____

Change of Pace

1. In the space below draw figures like this one and color the top part **red**, **green**, or **yellow**. Color the bottom part **blue** or **black**. Show all the different ways to color the figure.
How many different ways are there? _____



2. If you color the top part **pink** or **orange** and the bottom part **black**, **red**, **green**, or **blue**, how many different ways are there to color the figure? _____

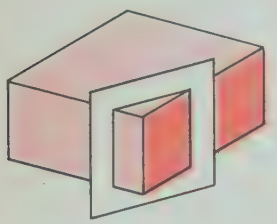
3. If you color the top part **red**, **blue**, **yellow**, or **black** and the bottom part **green**, **red**, or **purple**, how many different ways are there to color the figure? _____

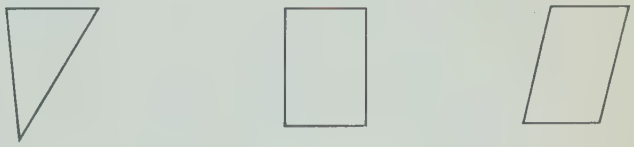
9 Geometry

Plane Figures and Space Figures

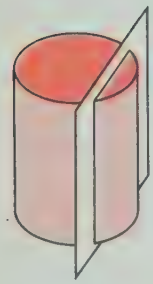
If you could cut through each solid figure and trace around it on a piece of paper as shown, which shape would you get? Place a √ in the figure you choose.

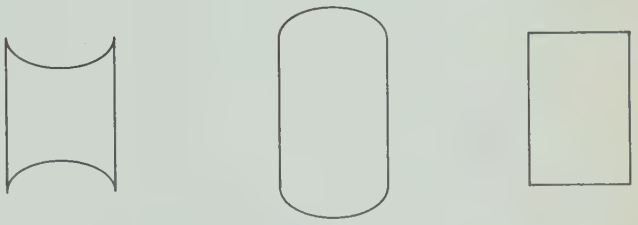
1.



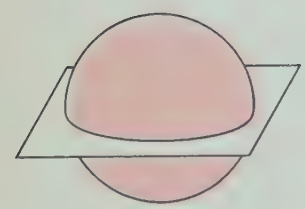


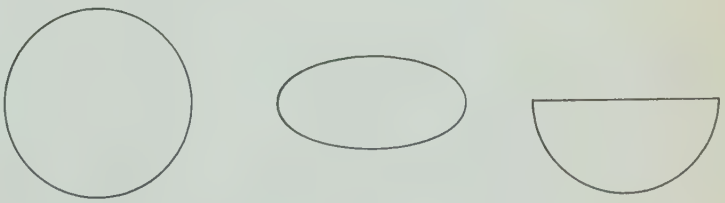
2.



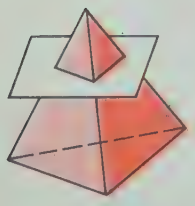


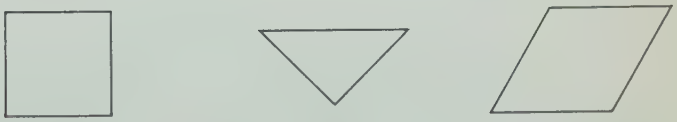
3.



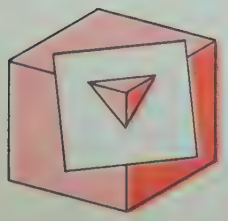


4.





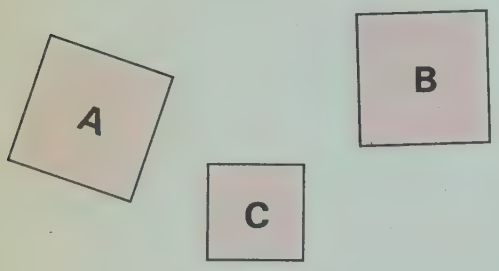
5.



Figures that have the same size and same shape are **congruent.**

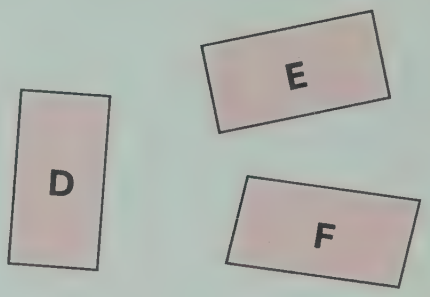
Complete each sentence.

1.



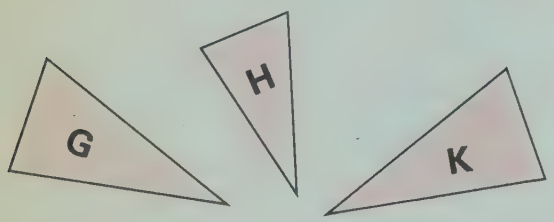
Square **A** is congruent to square _____.

2.



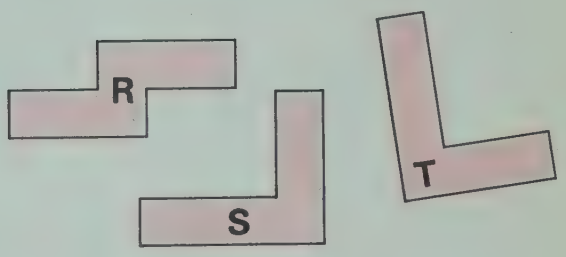
Rectangle **D** is congruent to rectangle _____.

3.



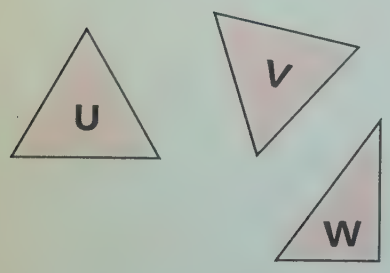
Triangle **G** is congruent to triangle _____.

4.



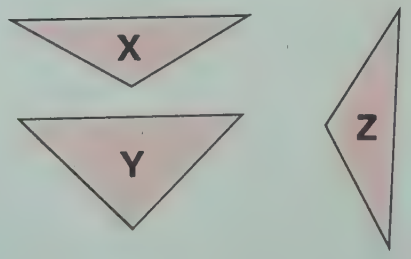
Region _____ is congruent to region _____.

5.



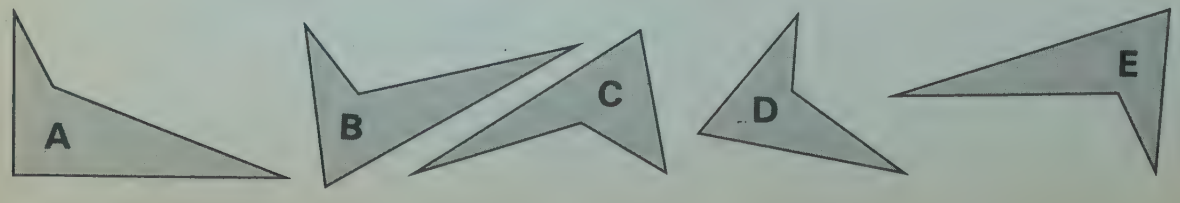
Triangle _____ is congruent to triangle _____.

6.



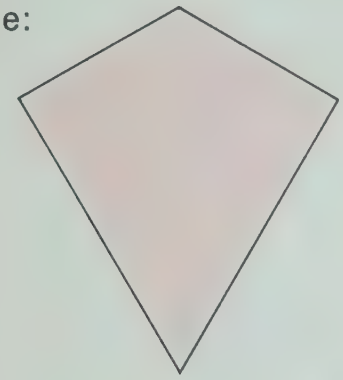
Triangle _____ is congruent to triangle _____.

7. Which two figures are congruent? _____ and _____

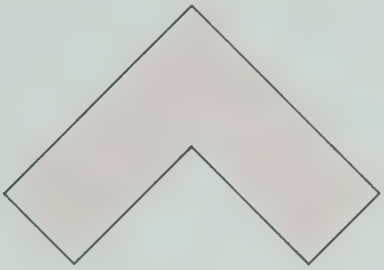


1. Draw as many lines of symmetry for each figure as you can find.
Each line of symmetry should divide the figure into 2 congruent figures.

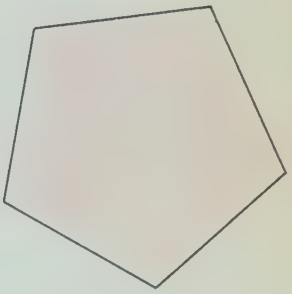
Example:



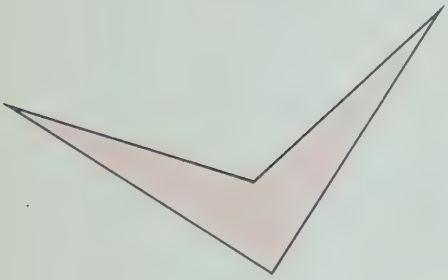
A



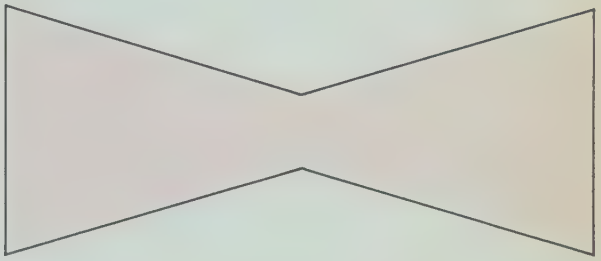
B



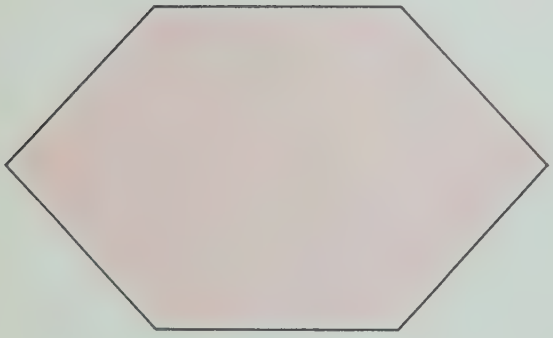
C



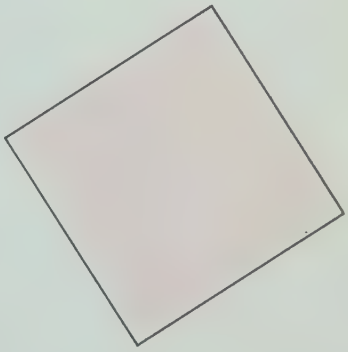
D



E



F



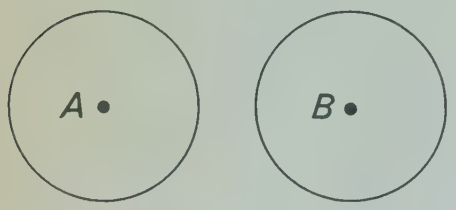
2. Which figures have more than one line of symmetry? _____

3. Which figure has the most lines of symmetry? _____

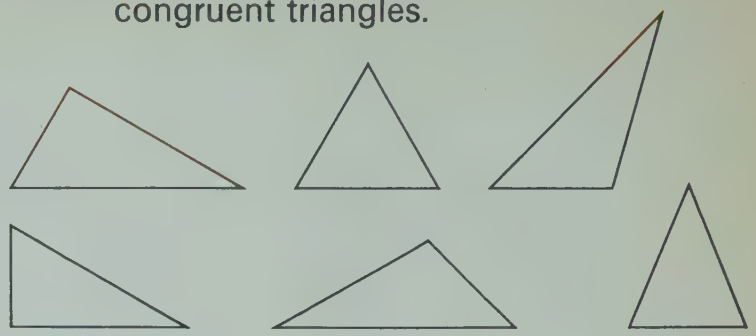
4. In which figure does a line of symmetry divide the figure into 2 congruent pentagons? _____

5. In which figures does a line of symmetry divide the figure into 2 congruent triangles? _____

1. Draw a radius in circle *A*.
Draw a diameter in circle *B*.



2. Place √'s in the pair of congruent triangles.



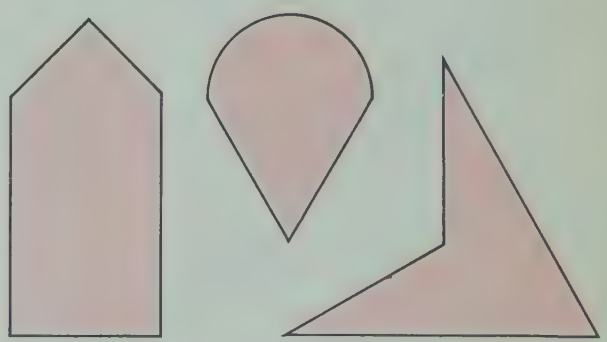
3. Match each figure with its name.

Cone

Cylinder

Pyramid

4. Draw a line of symmetry through each figure.



Change of Pace

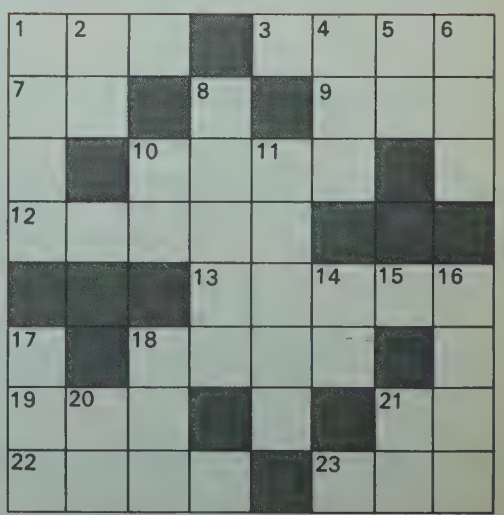
Work the puzzle.

Across

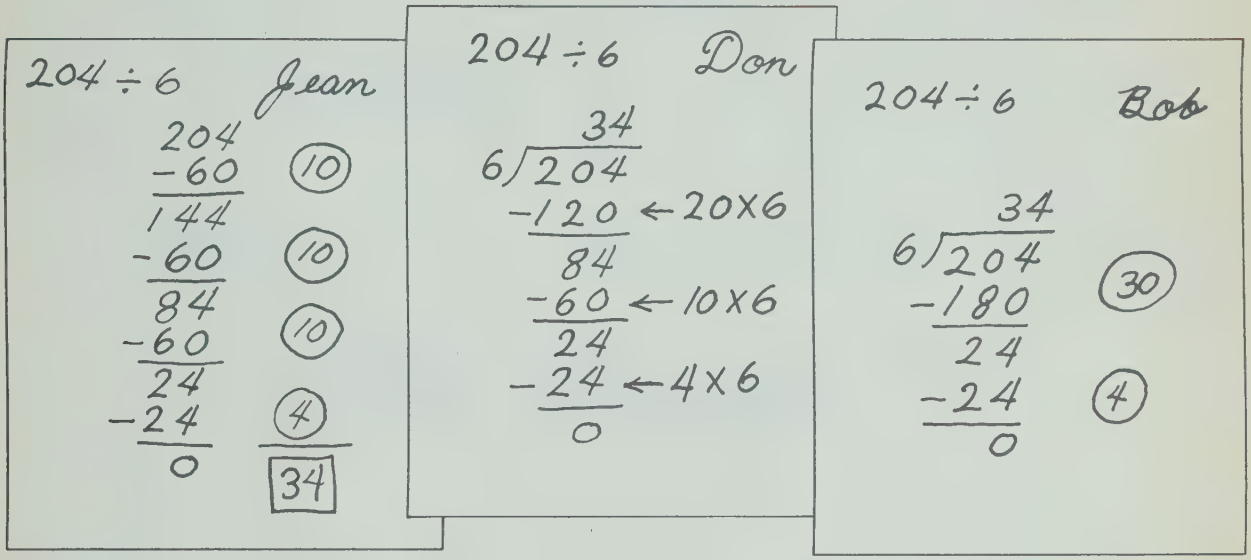
1. 7 × 90
3. 300 + 400 + 70 + 1
7. 4 tens
9. 5 × (8 × 10)
10. 1254 + 10
12. Ten thousand seventy
13. 60 000 + 900 + 1
18. 10 × 10 × 10
19. 950 < ___ < 952
21. 83 × ___ = 830
22. (9 × 1000) + 10
23. 2 × (3 × 100)

Down

1. (80 × 80) + 1
2. 120 ÷ 40
4. (4 × 100) + (4 × 10) + 4
5. 210 ÷ 3
6. 10 tens
8. 8276 × 10
10. 560 ÷ 56
11. 60 × 1000
14. 30 × 3
16. Ten hundred
17. 1000 − 1
18. 100 + 10 + 1
20. ___ × 2 = 100
21. 100 − 90



Jean, Don, and Bob worked the same problem. Study their work and answer the questions.



1. Jean

A How many sixes were subtracted the first time? _____

The second time? _____ The third time? _____ The last time? _____

B How many sixes were subtracted in all? _____

2. Don

A How many sixes were subtracted the first time? _____

The second time? _____ The last time? _____

B How many sixes were subtracted in all? _____

3. Bob

A How many sixes were subtracted the first time? _____

B How many sixes were subtracted the second time? _____

C How many sixes were subtracted in all? _____

4. A Whose work is shortest? _____

B Did everyone find the same quotient for 204 ÷ 6? _____

C What is the quotient for 204 ÷ 6? _____

1. Use your own method of subtracting to find these quotients.

A $4 \overline{)196}$

B $3 \overline{)84}$

C $5 \overline{)155}$

D $3 \overline{)108}$

E $6 \overline{)174}$

F $8 \overline{)184}$

2. Find the missing numbers.

A

$$\begin{array}{r} 3 \overline{)108} \\ -\ 90 \\ \hline 18 \\ -\ 18 \\ \hline 0 \end{array} \quad \begin{array}{l} \\ \times 3 \\ \\ \times 3 \\ \\ \end{array}$$

B

$$\begin{array}{r} 5 \overline{)123} \\ -\ 100 \\ \hline 23 \\ -\ 20 \\ \hline 3 \end{array} \quad \begin{array}{l} \\ \times 5 \\ \\ \times 5 \\ \\ \end{array}$$

C

$$\begin{array}{r} 4 \overline{)374} \\ -\ 360 \\ \hline 14 \\ -\ 12 \\ \hline 2 \end{array} \quad \begin{array}{l} \\ \times 4 \\ \\ \times 4 \\ \\ \end{array}$$

D

$$\begin{array}{r} 6 \overline{)453} \\ -\ 420 \\ \hline 33 \\ -\ 30 \\ \hline 3 \end{array} \quad \begin{array}{l} \\ \times 6 \\ \\ \times 6 \\ \\ \end{array}$$

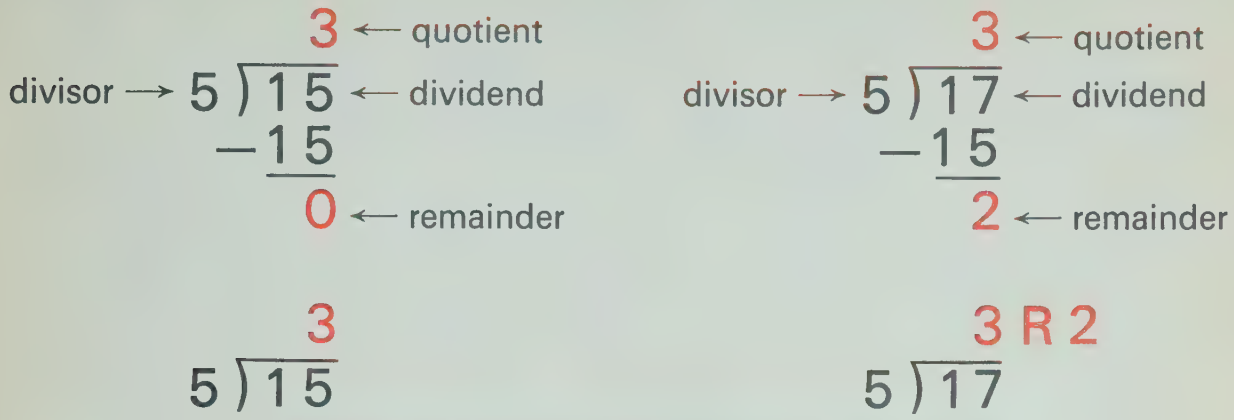
E

$$\begin{array}{r} 2 \overline{)96} \\ -\ 80 \\ \hline 16 \\ -\ \_\_ \\ \hline \end{array} \quad \begin{array}{l} \\ \times 2 \\ \\ \times 2 \\ \\ \end{array}$$

F

$$\begin{array}{r} 4 \overline{)346} \\ -\ 320 \\ \hline \\ -\ \_\_ \\ \hline \end{array} \quad \begin{array}{l} \\ \times 4 \\ \\ \times 4 \\ \\ \end{array}$$

Study the examples.



If the dividing has been completed correctly, the remainder is less than the divisor.

1. Find the quotients and remainders.

A $4\overline{)17}$ B $6\overline{)38}$ C $3\overline{)28}$ D $5\overline{)44}$

E $8\overline{)49}$ F $7\overline{)45}$ G $8\overline{)75}$ H $9\overline{)63}$

2. Solve each story problem.

A How many 8¢ stamps can you buy for 25¢? _____ stamps

How much money will you have left? _____ ¢

B 25 children are to line up in rows of 7.

How many full rows will there be? _____ rows

How many children will be left? _____ children

1. Choose the correct number pair to complete the inequalities in each part. Then find the quotient and remainder.

Number pairs:	1	2	3	4	5	6	7	8	9
	2	3	4	5	6	7	8	9	10

A ___ $\times 3 < 8$
___ $\times 3 > 8$

$3\overline{)8}$

B ___ $\times 4 < 39$
___ $\times 4 > 39$

$4\overline{)39}$

C ___ $\times 6 < 53$
___ $\times 6 > 53$

$6\overline{)53}$

D ___ $\times 8 < 55$
___ $\times 8 > 55$

$8\overline{)55}$

E ___ $\times 7 < 31$
___ $\times 8 > 31$

$7\overline{)31}$

F ___ $\times 9 < 49$
___ $\times 9 > 49$

$9\overline{)49}$

2. Choose the correct number pair to complete the inequalities in each part.

Number pairs:	10	20	30	40	50	60	70	80	90
	20	30	40	50	60	70	80	90	100

A ___ $\times 4 < 130$
___ $\times 4 > 130$

B ___ $\times 6 < 160$
___ $\times 6 > 160$

C ___ $\times 9 < 650$
___ $\times 9 > 650$

D ___ $\times 7 < 460$
___ $\times 7 > 460$

E ___ $\times 7 < 300$
___ $\times 7 > 300$

F ___ $\times 5 < 490$
___ $\times 5 > 490$

From the set {**10**, **20**, **30**, **40**, **50**, **60**, **70**, **80**, **90**}, choose the **largest** number that will make the inequality sentence true. Write this number in the circle. Then write the other missing digits to complete the dividing.

1.

3) 5 4

– ___ ← ◯ × 3 < 54

___

– ___

___

2.

2) 8 5

– ___ ← ◯ × 2 < 85

___

– ___

___

3.

4) 1 3 2

– ___ ← ◯ × 4 < 132

___

– ___

___

4.

6) 2 6 3

– ___ ← ◯ × 6 < 263

___

– ___

___

5.

7) 2 9 5

– ___ ← ◯ × 7 < 295

___

– ___

___

6.

5) 3 2 4

– 3 ___ ← ◯ × 5 < 324

___

– ___

___

7.

9) 2 8 4

– ___ ← ◯ × 9 < 284

___

– ___

___

8.

7) 4 5 6

– ___ ← ◯ × 7 < 456

___

– ___

___

1. Complete the "check" to see if the dividing was done correctly.
Put a ring around **correct** or **incorrect** for each exercise.

A

$$\begin{array}{r} 73 \\ 4\overline{)295} \\ 280 \\ \hline 15 \\ 12 \\ \hline 3 \end{array}$$

Check

$$\begin{array}{r} 73 \\ \times\ 4 \\ \hline \\ +\ 3 \\ \hline \end{array}$$

correct

incorrect

B

$$\begin{array}{r} 65 \\ 6\overline{)405} \\ 360 \\ \hline 35 \\ 30 \\ \hline 5 \end{array}$$

Check

$$\begin{array}{r} 65 \\ \times\ 6 \\ \hline \\ +\ 5 \\ \hline \end{array}$$

correct

incorrect

C

$$\begin{array}{r} 83 \\ 7\overline{)583} \\ 560 \\ \hline 23 \\ 21 \\ \hline 2 \end{array}$$

Check

$$\begin{array}{r} 83 \\ \times\ 7 \\ \hline \\ +\ 2 \\ \hline \end{array}$$

correct

incorrect

2. Find the quotients and remainders. Check your work.

A $3\overline{)175}$ **Check**

B $4\overline{)350}$ **Check**

C $6\overline{)473}$ **Check**

D $5\overline{)298}$ **Check**

E $9\overline{)707}$ **Check**

F $4\overline{)369}$ **Check**

When 5 is substituted for each addend, the sum is the same.
The **average** of 4, 8, and 3 is **5.**

$^{5}4 + {}^{5}8 + {}^{5}3 = 15$

1. Find the sum. Then write the correct substitute in each .

A $4 + 6 + 8 + 2 = \square$

When is substituted for each addend, the sum is the same.
The average of 4, 6, 8, and 2 is .

B $3 + 7 + 9 + 6 + 5 = \square$

When is substituted for each addend, the sum is the same.
The average of 3, 7, 9, 6, and 5 is .

C $12 + 8 + 7 = \square$

The average of 12, 8, and 7 is .

2. Write the missing numbers.

A The average of 14 and 16 is _____.

B The average of 20 and 30 is _____.

C The average of 8, 10, and 12 is _____.

D The average of 9, 16, and 5 is _____.

3. Complete the sentences.

A The sum of 3, 5, and 4 is 12. To find the average of 3, 5, 4, divide _____ by 3.

B To find the average of 6, 8, 5, 9, divide _____ by 4.

C To find the average of 9, 11, and 4, divide _____ by _____.

D To find the average of any 3 numbers, divide their sum by _____.

E To find the average of a set of numbers, divide the _____ of the numbers by the _____ of addends.

4. Find the average of the numbers in each set.

A {4, 9, 7, 12} _____

B {5, 3, 9, 7} _____

C {16, 22} _____

D {39, 21, 45} _____

E {70, 54, 62, 98, 26, 14} _____

F {47, 65, 33, 89, 56} _____

From the set {**100, 200, 300, 400, 500, 600, 700, 800, 900**}, choose the **largest** number that makes the inequality sentence true. Write this number in the circle. Then complete the dividing.

1.

$$2\overline{)\,4\,6\,4}$$
$$-\ \_\_\_\_$$
$$\_\_\_\_$$

← ◯ × 2 < 464

2.

$$4\overline{)\,2\,3\,4\,6}$$
$$-\ \_\_\_\_$$
$$\_\_\_\_$$

← ◯ × 4 < 2346

3.

$$3\overline{)\,1\,9\,7\,3}$$
$$-\ \_\_\_\_$$
$$\_\_\_\_$$

← ◯ × 3 < 1973

4.

$$5\overline{)\,4\,4\,6\,2}$$
$$-\ \_\_\_\_$$
$$\_\_\_\_$$

← ◯ × 5 < 4462

5.

$$9\overline{)\,3\,4\,6\,8}$$
$$-\ \_\_\_\_$$
$$\_\_\_\_$$

← ◯ × 9 < 3468

6.

$$8\overline{)\,4\,0\,6\,7}$$
$$-\ \_\_\_\_$$
$$\_\_\_\_$$

← ◯ × 8 < 4067

7.

$$6\overline{)\,8\,4\,7}$$
$$-\ \_\_\_\_$$
$$\_\_\_\_$$

← ◯ × 6 < 847

8.

$$6\overline{)\,5\,9\,3\,8}$$
$$-\ \_\_\_\_$$
$$\_\_\_\_$$

← ◯ × 6 < 5938

Find the quotients and remainders. Check your work.

1. $3\overline{)320}$ **Check**

2. $6\overline{)695}$ **Check**

3. $8\overline{)5429}$ **Check**

4. $5\overline{)2193}$ **Check**

5. $9\overline{)4684}$ **Check**

6. $4\overline{)3771}$ **Check**

7. $7\overline{)5899}$ **Check**

8. $5\overline{)2595}$ **Check**

9. $9\overline{)8350}$ **Check**

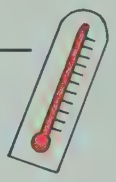
10. $8\overline{)7012}$ **Check**

11. $6\overline{)4720}$ **Check**

12. $7\overline{)6953}$ **Check**

1. John is 152 cm tall, Ted is 148 cm tall, and Sam is 156 cm tall. What is the average height of the 3 boys? _____

2. 6 light bulbs were put into each box. There were 258 light bulbs. How many boxes were needed? _____



3. The temperatures at noon on Friday, Saturday, and Sunday were 30 °C, 32 °C, and 31 °C. What was the average noon temperature for the 3 days? _____

4. From a group of 453 batteries, 8 boxes were filled with the same number in each box. How many batteries in each box? _____ How many extra batteries? _____

5. 6 cows were put into each pen. There were 144 cows. How many pens were needed? _____

6. Jane found that there were only 189 days until Christmas. How many 7-day weeks is this? _____

7. A newsboy sold 24 magazines that cost 25¢ each. How much money did he receive? _____

8. A record costs $3.98 and a book costs $2.49. What is the total cost?

_____

9. What is the average of the following test scores: 94, 86, 88, 97, 100? _____

Change of Pace

For **magic squares** A and B, find the sum of the numbers along each arrow. Complete C so it will be a magic square.

A

30	25	26
23	27	31
28	29	24

B

34	39	32
33	35	37
38	31	36

C

24	28	29
	27	

From the set {**1**, **2**, **3**, **4**, **5**, **6**, **7**, **8**, **9**}, choose the **largest** number that makes the inequality sentence true. Write this number in the circle. Then complete the dividing.

1.

30) 156

____ ← ◯ × 30 < 156

2.

20) 174

____ ← ◯ × 20 < 174

3.

50) 379

____ ← ◯ × 50 < 379

4.

60) 543

____ ← ◯ × 60 < 543

From the set {**10**, **20**, **30**, **40**, **50**, **60**, **70**, **80**, **90**}, choose the **largest** number that makes the inequality sentence true. Write this number in the circle. Then complete the dividing.

5.

30) 1960

____ ← ◯ × 30 < 1960

6.

20) 1560

____ ← ◯ × 20 < 1560

7.

40) 3190

____ ← ◯ × 40 < 3190

8.

50) 4675

____ ← ◯ × 50 < 4675

Find the **largest** number that makes the sentence in the cloud true. Then multiply to see if this number is the largest one that will make the other sentence true. For each inequality sentence below the cloud, write the **largest** number that makes it true.

1. Think: $\square \times 30 < 167$ → $\square \times 34 < 167$

$$\begin{array}{r} 34 \\ \times\ \square \\ \hline 170 \end{array}$$

2. Think: $\square \times 40 < 264$ → $\square \times 39 < 264$

$$\begin{array}{r} 39 \\ \times\ \square \\ \hline \end{array}$$

3. Think: $\square \times 60 < 495$ → $\square \times 62 < 495$

$$\begin{array}{r} 62 \\ \times\ \square \\ \hline \end{array}$$

4. Think: $\square \times 20 < 167$ → $\square \times 18 < 167$

$$\begin{array}{r} 18 \\ \times\ \square \\ \hline \end{array}$$

5. Think: $\square \times 70 < 584$ → $\square \times 66 < 584$

$$\begin{array}{r} 66 \\ \times\ \square \\ \hline \end{array}$$

6. Think: $\square \times 30 < 278$ → $\square \times 29 < 278$

$$\begin{array}{r} 29 \\ \times\ \square \\ \hline \end{array}$$

7. Think: $\square \times 40 < 257$ → $\square \times 42 < 257$

$$\begin{array}{r} 42 \\ \times\ \square \\ \hline \end{array}$$

8. Think: $\square \times 50 < 413$ → $\square \times 53 < 413$

$$\begin{array}{r} 53 \\ \times\ \square \\ \hline \end{array}$$

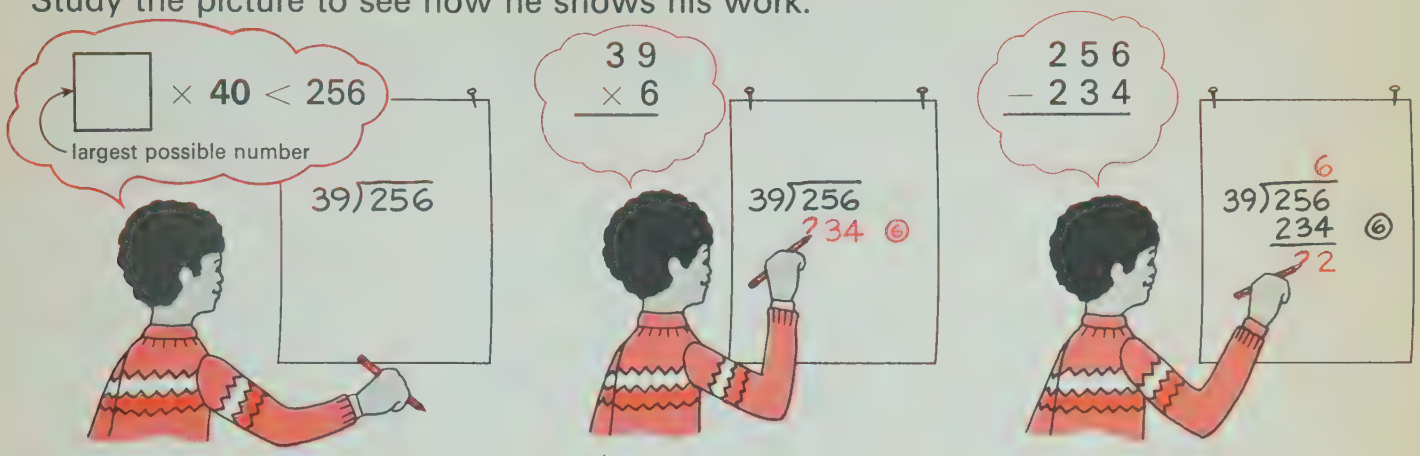
9. Think: $\square \times 60 < 502$ → $\square \times 63 < 502$

$$\begin{array}{r} 63 \\ \times\ \square \\ \hline \end{array}$$

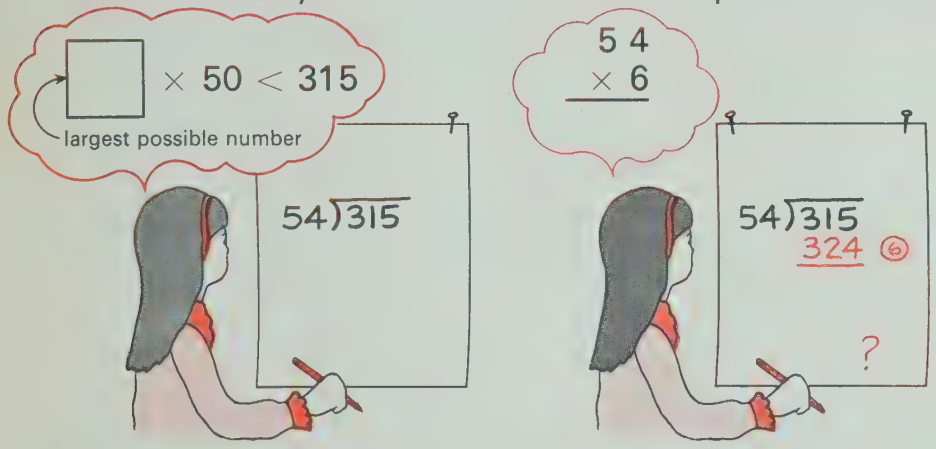
10. Think: $\square \times 80 < 653$ → $\square \times 76 < 653$

$$\begin{array}{r} 76 \\ \times\ \square \\ \hline \end{array}$$

1. Write the numbers to show what Jeff is thinking.
Study the picture to see how he shows his work.



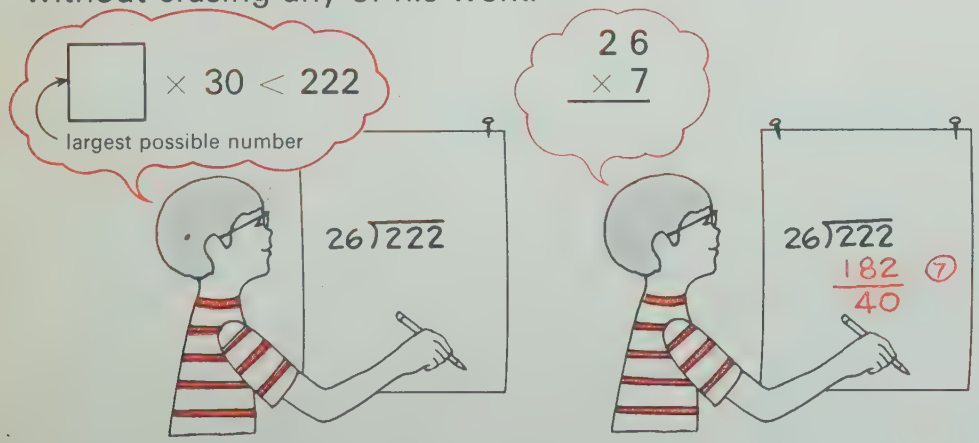
2. Nancy was not able to complete her problem. Study her work.
Then show Nancy how to find the correct quotient and remainder.



Show your work here.

54⟌315

3. Fred's work is not complete. Show Fred how to find the correct quotient without erasing any of his work.



Show your work here.

26⟌222
− 182 ⑦
40
◯

4. Find the quotients and remainders.

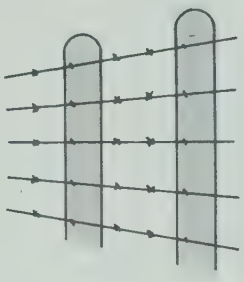
A 29⟌234 B 61⟌335 C 38⟌289 D 56⟌466 E 34⟌163

Find the quotients and remainders.

1. $3\overline{)55}$
2. $6\overline{)85}$
3. $4\overline{)77}$
4. $9\overline{)450}$
5. $2\overline{)195}$
6. $4\overline{)325}$
7. $5\overline{)213}$
8. $7\overline{)279}$
9. $6\overline{)357}$
10. $9\overline{)716}$
11. $8\overline{)2054}$
12. $5\overline{)4920}$
13. $7\overline{)6399}$
14. $5\overline{)4386}$
15. $20\overline{)1965}$
16. $40\overline{)3850}$
17. $90\overline{)8111}$
18. $50\overline{)3923}$
19. $29\overline{)158}$
20. $62\overline{)509}$
21. $66\overline{)585}$
22. $71\overline{)6549}$

1. The distance around a square field is 224 m. How long is one side of the field? _____

2. The fence around the field is made of 5 wires. How many metres of wire were needed to make the fence? _____



3. Five fasteners were needed on each post to fasten the wires. If 260 fasteners were used in all, how many posts were there? _____

4. If the wire costs 18¢ each metre, what does it cost to buy one piece of wire that will go all the way around the field? _____

5. How much does it cost to buy the 5 wires needed to make the fence all the way around the field? _____

6. At the store there were 192 posts placed in piles of 24 posts each. How many piles of posts were there? _____

7. It took 168 hours for the men to build the fence. How many 24-hour periods is this? _____

Short Stories.

1. 1422 bottles. 6 in each carton.

   How many cartons? _____

2. 168 children. Each bus holds 42.

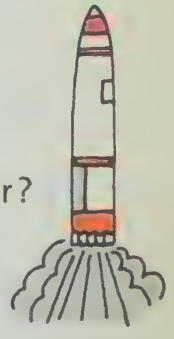
   How many buses? _____

3. 30 trees in each row. 54 rows of trees.

   How many trees? _____

4. Drive 265 km in 5 hours. About how many km each hour? _____

5. Drive an average of 88 km an hour. Drive 8 hours. How far? _____



6. Rocket to the moon. Took four 24-hour days. How many hours? _____

7. 288 marbles. Put 30 in each bag.

   How many bags? _____

   How many extra marbles? _____

8. 108 eggs. Put 12 in each carton.

   How many cartons? _____

1. Find the quotients and remainders. Check your work.

A	$3\overline{)67}$	**Check**	B $4\overline{)306}$	**Check**	C $7\overline{)2225}$ **Check**

2. Find the average of the numbers in each set.

A {10, 8, 14, 12} _____ B {60, 84, 71, 55, 65} _____ C {96, 48} _____

3. Find the quotients and remainders.

A $40\overline{)375}$ B $92\overline{)725}$ C $64\overline{)196}$ D $71\overline{)5983}$

4. 174 sheets of paper were divided equally among the children in the class.

If there were 29 children, how many sheets did each child receive? _____

Change of Pace

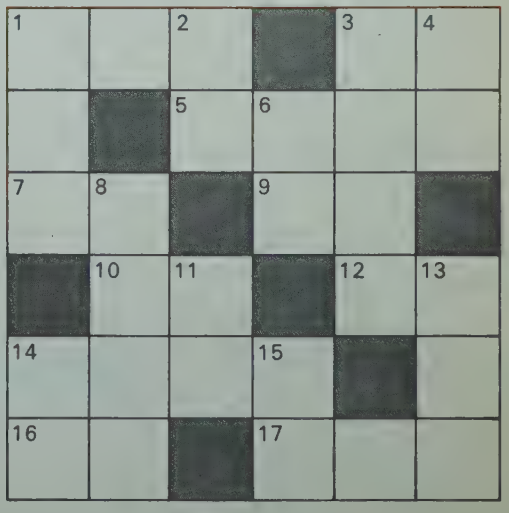
Work the puzzle.

Across

1. Add 96 to 87
3. 5 fives
5. 83 × 83
7. 5 less than 50
9. 1 less than 7 × 5
10. Number of hours in a day
12. Half of 42
14. 326 × 18
16. 4 x 10
17. 1 more than 99

Down

1. A dozen dozen
2. 72 ÷ 2
3. 7 × 406
4. Less than 60, greater than 58
6. 498 ÷ 6
8. 2640 x 2
11. (4 × 10) + 6
13. 10 × 10
14. 9 × 6 or 6 × 9
15. 179 − 98



11 Number Theory

Finding Factors of a Number

1. In each exercise, complete the multiplication equations by giving the missing factors. Do not use the same number in more than one equation in an exercise.

A

$1 \times 16 = 16$

$2 \times 8 = 16$

$4 \times 4 = 16$

The **factors** of 16 are 1, 16, 2, 8, 4.

B

$1 \times \square = 20$

$2 \times \square = 20$

$4 \times \square = 20$

The factors of 20 are _____.

C

$1 \times \square = 9$

$3 \times \square = 9$

The factors of 9 are _____.

D

$\square \times \square = 12$

$\square \times \square = 12$

$\square \times \square = 12$

The factors of 12 are _____.

E

$\square \times \square = 27$

$\square \times \square = 27$

The factors of 27 are _____.

F

$\square \times \square = 18$

$\square \times \square = 18$

$\square \times \square = 18$

The factors of 18 are _____.

G

$\square \times \square = 24$

$\square \times \square = 24$

$\square \times \square = 24$

$\square \times \square = 24$

The factors of 24 are _____.

H

$\square \times \square = 30$

$\square \times \square = 30$

$\square \times \square = 30$

$\square \times \square = 30$

The factors of 30 are _____.

I

$\square \times \square = 36$

$\square \times \square = 36$

$\square \times \square = 36$

$\square \times \square = 36$

$\square \times \square = 36$

The factors of 36 are _____.

2. **A** The factors of 14 are _____. **B** The factors of 32 are _____.

1. Draw lines connecting the **common factors** of the 2 numbers.
Then give the **greatest common factor** of the 2 numbers.

A Factors of : {1, 2, 4, 8}

Factors of 12: {1, 2, 3, 4, 6, 12}

The **greatest common factor** of 8 and 12 is 4

B Factors of 12: {1, 2, 3, 4, 6, 12}

Factors of 18: {1, 2, 3, 6, 9, 18}

The greatest common factor of 12 and 18 is _____.

2. List the factors of the two numbers. Then follow the directions of exercise 1.

A Factors of 10: { }

Factors of 15: { }

The greatest common factor of 10 and 15 is _____.

B Factors of 18: { }

Factors of 24: { }

The greatest common factor of 18 and 24 is _____.

C Factors of 12: { }

Factors of 16: { }

The greatest common factor of 12 and 16 is _____.

D Factors of 12: { }

Factors of 30: { }

The greatest common factor of 12 and 30 is _____.

E Factors of 9: { }

Factors of 27: { }

The greatest common factor of 9 and 27 is _____.

F Factors of 24: {

Factors of 32: { }

The greatest common factor of 24 and 32 is _____.

G Factors of 32: { }

Factors of 48: { }

The greatest common factor of 32 and 48 is _____.

H Factors of 16: { }

Factors of 27: { }

The greatest common factor of 16 and 27 is _____.

1. List all the factors of each number.

A Factors of **1**: _____

B Factors of **2**: _____

C Factors of **3**: _____

D Factors of **4**: _____

E Factors of **5**: _____

F Factors of **6**: _____

G Factors of **7**: _____

H Factors of **8**: _____

I Factors of **9**: _____

J Factors of **10**: _____

K Factors of **11**: _____

L Factors of **12**: _____

M Factors of **13**: _____

N Factors of **14**: _____

O Factors of **15**: _____

P Factors of **16**: _____

Q Factors of **17**: _____

R Factors of **18**: _____

S Factors of **19**: _____

T Factors of **20**: _____

U Factors of **21**: _____

V Factors of **22**: _____

W Factors of **23**: _____

X Factors of **24**: _____

Y Factors of **25**: _____

Z Factors of **26**: _____

2. Which number in exercise 1 has **just one factor**? _____

3. Which of the numbers in exercise 1 have **exactly two factors**?

_____

4. Whole numbers that have **exactly two factors**, the number itself and 1, are called **prime numbers**.

List all the prime numbers less than 26. _____

5. A Are there any prime numbers between 25 and 30? _____

B List the prime numbers between 25 and 30. _____

6. Whole numbers greater than 1 that have **more than 2 factors** are called **composite numbers**. List the composite numbers less than 30.

_____

7. Which prime number is an even number? _____

1. Write the missing numbers.

A $1 \times \square = 42$

$2 \times \square = 42$

$3 \times \square = 42$

$6 \times \square = 42$

B Factors of 42: _____

2. List all the factors of each number.

A Factors of 25: _____

B Factors of 28: _____

C Factors of 31: _____

D Factors of 33: _____

E Factors of 45: _____

F Which one of the numbers above is a **prime number**? _____

3. A Factors of 18: _____

B Factors of 30: _____

C The common factors of 18 and 30 are _____.

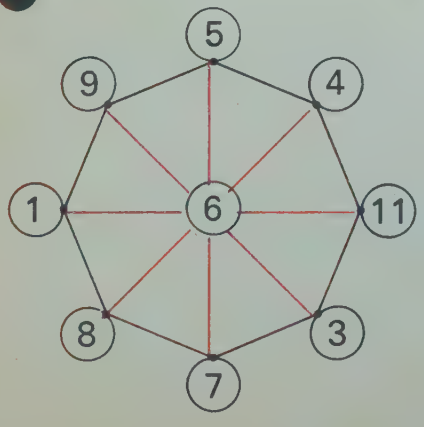
D The **greatest common factor** of 18 and 30 is _____.

4. What is the greatest common factor of 28 and 42? _____

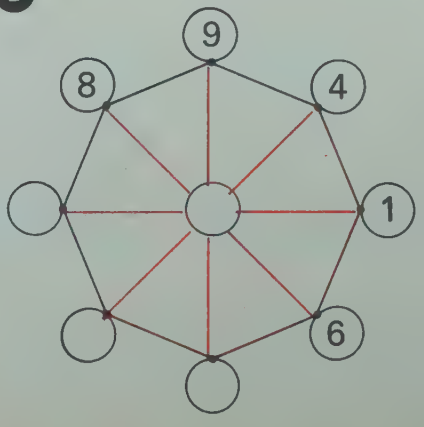
Change of Pace

An 8-sided figure is called an **octagon**. Figure A below is a Magic Octagon because each set of 3 numbers along a colored line has the same sum. Check this. Also, the number in the middle is the average of the 3 numbers on any one colored line. Use this information to make each figure below a Magic Octagon.

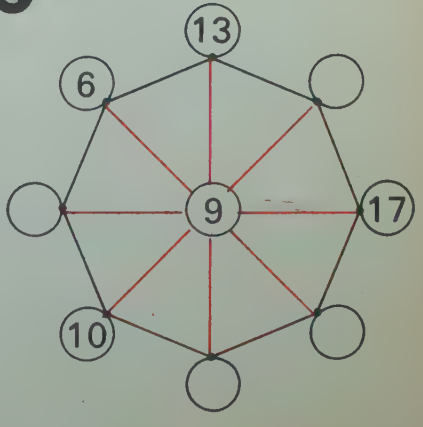
A



B



C



12 Fractions

Number Pairs and Fractions

Study exercise 1. Then complete exercises 2 through 6.

We think about a pair of numbers. We write a fraction for the number pair.

1. 3 parts are colored.
4 parts in all.

3 out of **4** parts are colored.
$\frac{3}{4}$ of the region is colored.
Read: "three-**fourths**" for $\frac{3}{4}$.

2. _____ part is colored.

_____ parts in all.

1 out of 3 parts are colored.

_____ of the region is colored.

3. _____ balls are black.

_____ balls in all.

_____ out of _____ balls are black.

_____ of the balls are black.

4. _____ apples have worms.

_____ apples in all.

_____ out of _____ apples have worms.

_____ of the apples have worms.

5. _____ pieces of pie have been eaten.

_____ pieces at the beginning.

_____ out of _____ pieces have been eaten.

_____ of the pie has been eaten.

6. _____ plants have blossoms on them.

_____ plants in all.

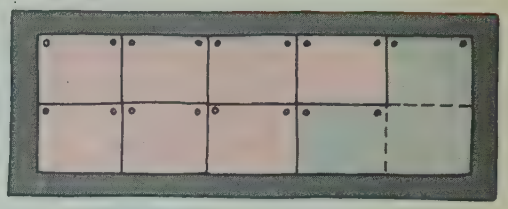
_____ out of _____ plants have blossoms on them.

_____ of the plants have blossoms on them.

Read each story carefully. Then complete the sentence by writing a fraction in each blank.

1. The children were covering the bulletin board with sheets of paper. There was room for 10 sheets. When they had tacked up 7 sheets,

   _____ of the bulletin board was covered.

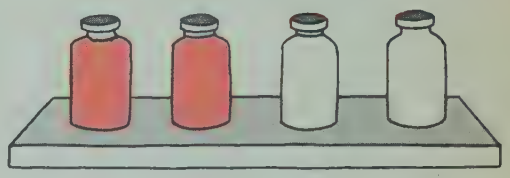


2. There were 5 children on a committee. 3 of them were girls.

   _____ of the children were girls.

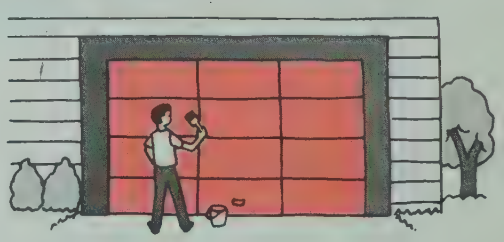
3. There were 4 jars on a shelf. 2 of them were full of juice.

   _____ of the jars were full of juice.

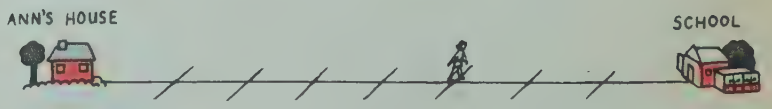


4. Jack was painting a garage door. He had painted 9 panels. There were 12 panels in all.

   He had painted _____ of the door.



5. Ann was walking to school. She had walked 5 blocks. It was 8 blocks from her house to school. Ann had walked _____ of the way to school.

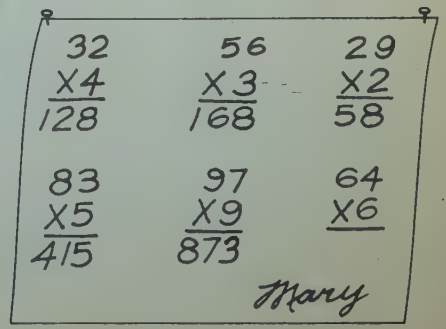


6. Sam had 16 marbles. 7 of them were black.

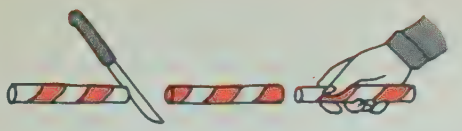
   _____ of the marbles were black.

7. Mary completed 5 out of 6 problems.

   She completed _____ of her problems.



A



This peppermint stick was cut into _____ pieces.

The boy is taking _____ piece.

The boy is taking $\frac{1}{3}$ of the peppermint stick.

B

This peppermint stick was cut into _____ pieces.

The boy is taking _____ piece.

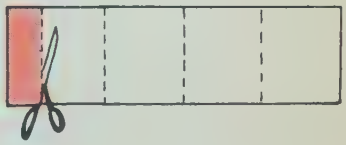
Is this boy taking $\frac{1}{3}$ of the peppermint stick? _____

Answer **true** or **false** for each exercise.

1. $\frac{1}{2}$ of stick is colored. _____

2. $\frac{1}{4}$ of the pie has been eaten. _____

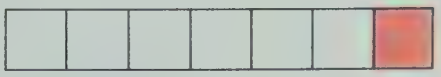
3. $\frac{1}{5}$ of the sheet of paper is being cut off. _____



4. $\frac{4}{5}$ of the pizza is left. _____

5. $\frac{3}{4}$ of the circle is colored. _____

6. $\frac{1}{7}$ of the region is shaded. _____



7. $\frac{2}{3}$ of the cake has icing on top. _____

8. $\frac{5}{6}$ of the region is shaded. _____

Study the examples. Give the missing numbers.

A 2 of the dots are colored.

[ ] dots in all.

$\frac{2}{6}$ of the dots are colored.

1 set has colored dots.

[ ] sets in all.

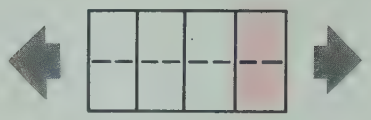
$\frac{1}{3}$ of the dots are colored.

Since $\frac{2}{6}$ and $\frac{1}{3}$ can both be used to compare the colored dots with **all the dots**,

we say $\frac{2}{6}$ **is equivalent to** $\frac{1}{3}$.

B 1 part out of 4 parts is colored.

$\frac{1}{[\ ]}$ of the region is colored.



[ ] parts out of 8 parts are colored.

$\frac{[\ ]}{8}$ of the region is colored.

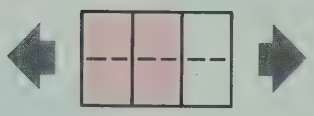
Since $\frac{1}{4}$ and $\frac{2}{8}$ can both be used to compare the colored part with the **whole region**,

we say $\frac{1}{4}$ **is equivalent to** $\frac{2}{8}$.

Give the missing numbers.

1. [ ] out of 3 parts are colored.

— of the region is colored.



[ ] out of 6 parts are colored.

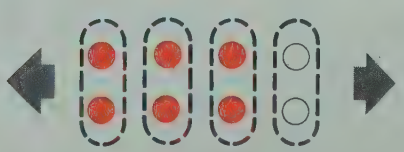
— of the region is colored.

— is equivalent to —.

2. [ ] dots are colored.

[ ] dots in all.

— of the dots are colored.



[ ] sets have colored dots.

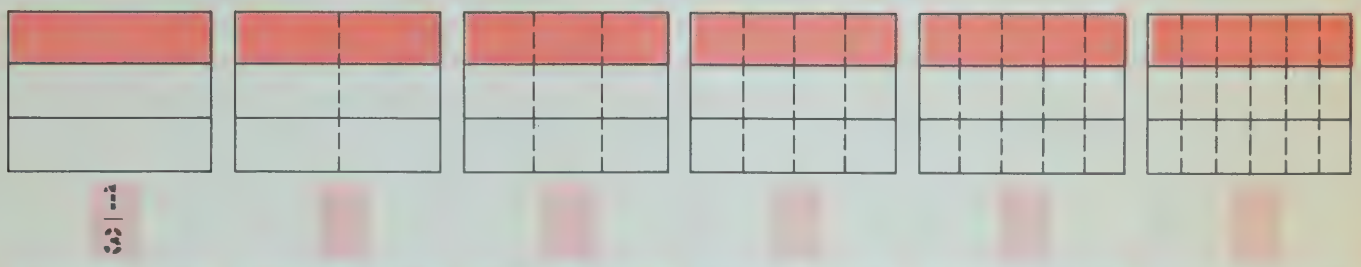
[ ] sets in all.

— of the dots are colored.

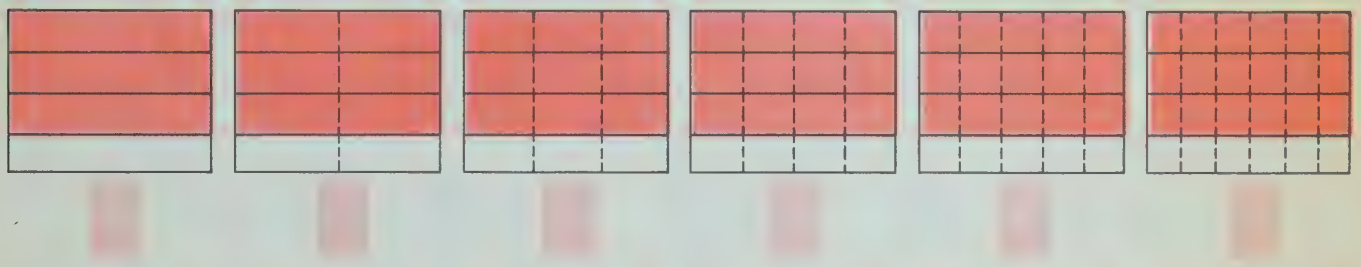
— is equivalent to —.

1. In each row the fractions suggested by the figures are equivalent to each other. Write these fractions.

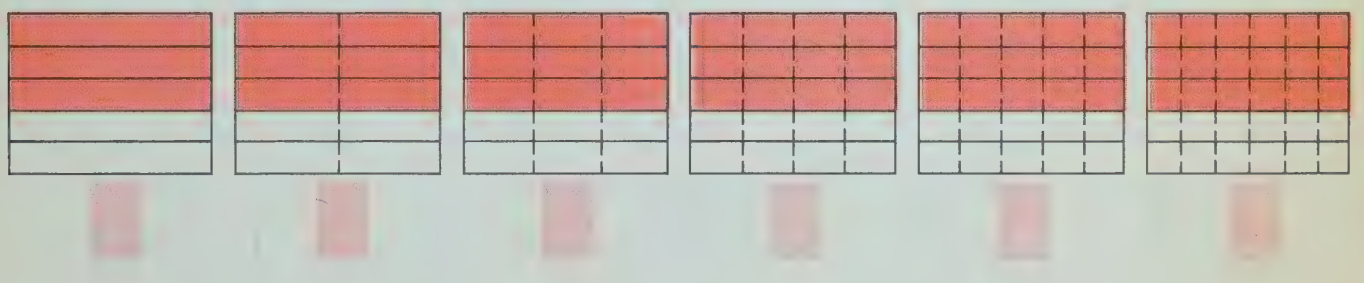
A



B

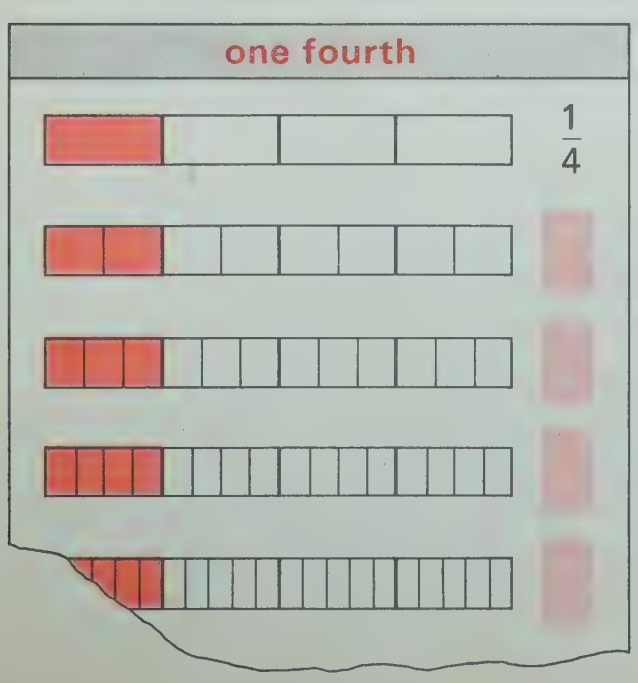


C

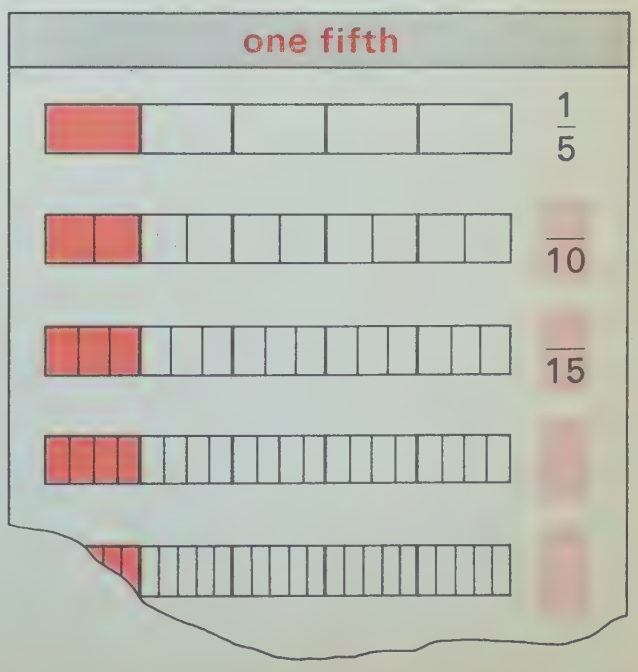


2. In the charts below, write fractions that show what part of the bar is shaded. Each fraction you write in chart A should be equivalent to $\frac{1}{4}$. Each fraction you write in chart B should be equivalent to $\frac{1}{5}$.

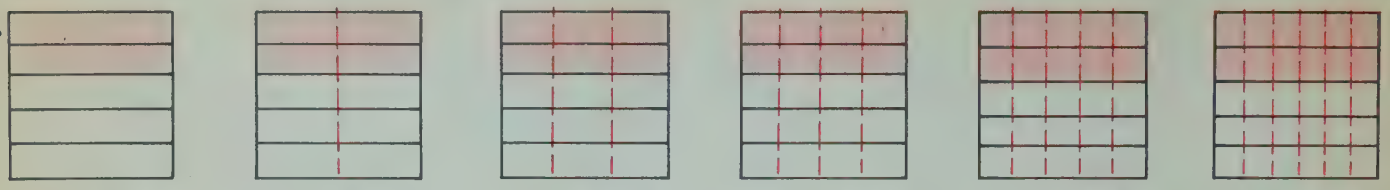
A



B



Write the missing fractions in each exercise.

1. 

$\frac{1 \times 2}{1 \times 5}$ $\frac{2 \times 2}{2 \times 5}$ $\frac{3 \times 2}{3 \times 5}$ $\frac{4 \times 2}{4 \times 5}$ $\frac{5 \times 2}{5 \times 5}$ $\frac{6 \times 2}{6 \times 5}$

2. $\frac{1 \times 2}{1 \times 7}$, $\frac{2 \times 3}{2 \times 7}$, $\frac{3 \times 3}{3 \times 7}$, $\frac{4 \times 3}{4 \times 7}$, ...

3. $\frac{1 \times 5}{1 \times 6}$, $\frac{2 \times 5}{2 \times 6}$, $\frac{3 \times 5}{3 \times 6}$, $\frac{4 \times 5}{4 \times 6}$, ...

4. $\left\{\frac{2}{3}, \frac{4}{6}, \frac{6}{9}, \_\_, \_\_, \_\_, \ldots\right\}$

5. $\left\{\frac{1}{5}, \frac{2}{10}, \frac{3}{15}, \_\_, \_\_, \_\_, \ldots\right\}$

6. $\left\{\frac{5}{10}, \frac{10}{20}, \frac{15}{30}, \_\_, \_\_, \_\_, \ldots\right\}$

7. $\left\{\frac{2}{7}, \frac{4}{14}, \frac{6}{21}, \_\_, \_\_, \_\_, \ldots\right\}$

8. $\left\{\frac{7}{10}, \frac{14}{20}, \_\_, \_\_, \_\_, \_\_, \ldots\right\}$

9. $\left\{\frac{4}{9}, \frac{8}{18}, \_\_, \_\_, \_\_, \_\_, \ldots\right\}$

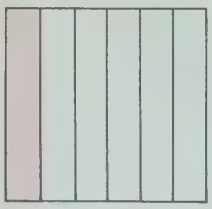
10. $\left\{\frac{3}{7}, \_\_, \_\_, \_\_, \_\_, \_\_, \ldots\right\}$

11. $\left\{\frac{5}{8}, \_\_, \_\_, \_\_, \_\_, \_\_, \ldots\right\}$

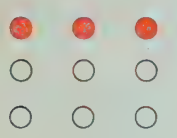
Write the correct **numerator** or **denominator** in each

1. 

$\frac{3}{4}$ ← Numerator ← Denominator

2. 

$\frac{1}{6}$ ← Numerator ← Denominator

3. 

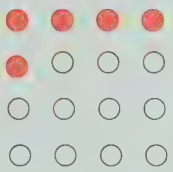
$\frac{\quad}{9}$ ← Numerator ← Denominator

4. 

$\frac{3}{\quad}$ ← Numerator ← Denominator

5. 

$\frac{\quad}{\quad}$ ← Numerator ← Denominator

6. 

$\frac{\quad}{\quad}$ ← Numerator ← Denominator

7. The denominator is twice the numerator.

$\frac{7}{\quad}$ ← Numerator ← Denominator

8. The numerator is 3 less than half of the denominator.

$\frac{\quad}{8}$ ← Numerator ← Denominator

9. The denominator is one more than 6 times the numerator.

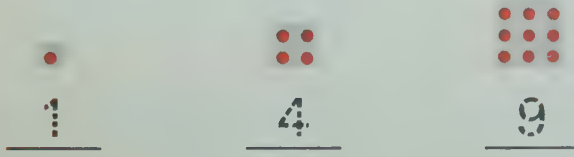
$\frac{3}{\quad}$ ← Numerator ← Denominator

Change of Pace

1. Each group of dots below shows a triangular number. Draw dots to show the next three triangular numbers.

1 3 6 ____ ____ ____

2. Draw dots to show the next three square numbers.



1 4 9 ____ ____ ____

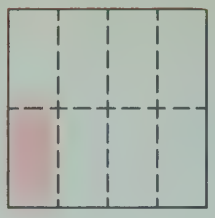
3. Write the correct triangular numbers in the blanks.

1 + 3 = 4 3 + 6 = 9 ____ + ____ = 16

____ + ____ = 25 ____ + ____ = 36 ____ + ____ = 49

1. Write the missing fractions.

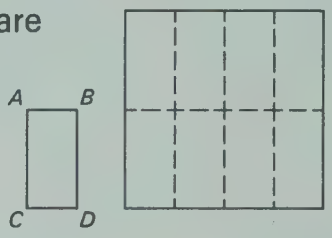
A We use fractions to compare a part of an object (or unit) with the whole object or unit.



The shaded region is _____ of the square.

OR

B We can use fractions to compare one object (or unit) with another object or unit.



Region *ABCD* is _____ the size of the square.

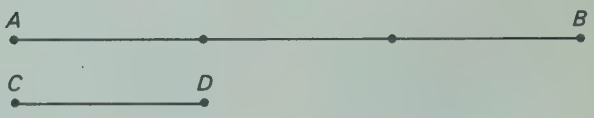
2. Write the missing fractions.

A We use fractions to compare a part of a segment with the whole segment.

$\overline{AC}$ is _____ of $\overline{AB}$.

OR

B We can use fractions to compare one segment with another segment.



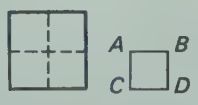
$\overline{CD}$ is _____ as long as $\overline{AB}$.

3. Write the missing fractions for each comparison.

A

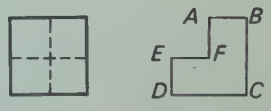
The shaded region is _____ of the square centimetre.

B



Region *ABCD* is _____ the size of the square centimetre.

C

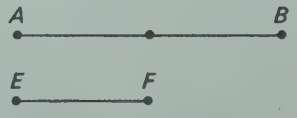


Region *ABCDEF* is _____ the size of the square centimetre.

D

Segment *AC* is _____ of the segment AB.

E



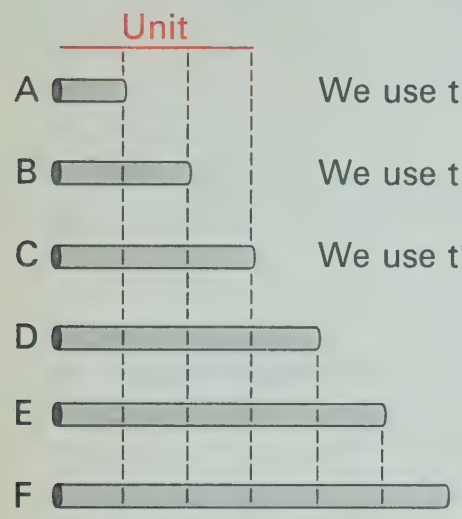
Segment *EF* is _____ as long as segment *AB*.

F

Segment *CD* is _____ as long as segment *AB*.

Fractions are often used to compare an object with a unit, such as a centimetre. Fractions with the numerator equal to or greater than the denominator are often used for such comparisons. Give the missing numbers or fractions.

1.



We use the fraction $\frac{1}{3}$ to compare rod A with the unit.

We use the fraction $\frac{\square}{3}$ to compare rod B with the unit.

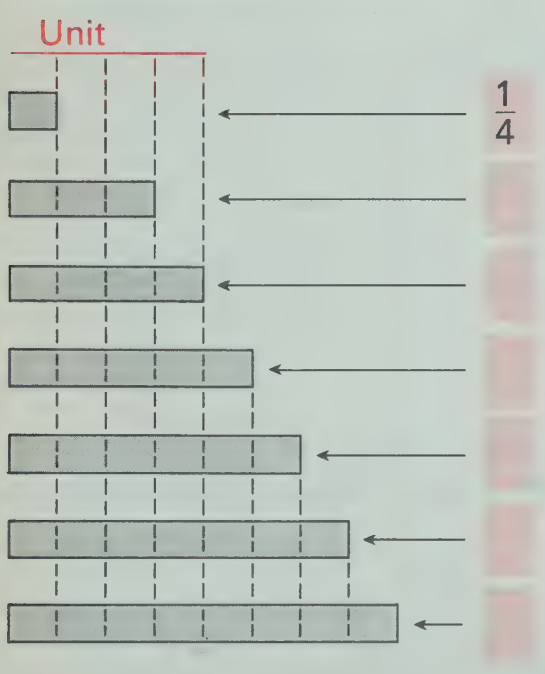
We use the fraction $\frac{\square}{3}$ to compare rod C with the unit.

For rod D, we use the fraction $\frac{4}{3}$.

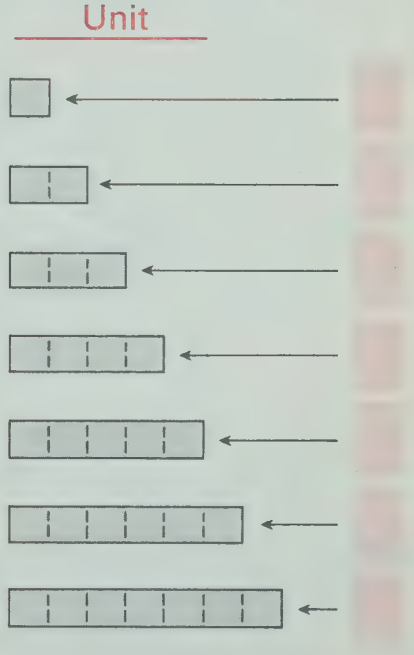
For rod E, we use the fraction $\frac{\square}{3}$.

For rod F, we use the fraction $\frac{\square}{3}$.

2.



3.



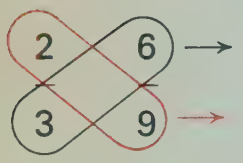
4.

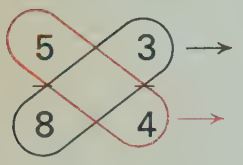
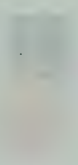
5. Fractions with numerator equal to or greater than the denominator are sometimes called **improper fractions.** Ring the **improper fractions** in the list.

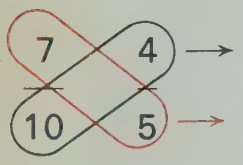
$\frac{2}{3}$, $\frac{3}{2}$, $\frac{2}{2}$, $\frac{5}{3}$, $\frac{1}{9}$, $\frac{7}{7}$, $\frac{9}{5}$.

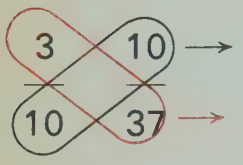
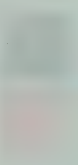
Find the products. Put a ring around **equivalent** or **not equivalent** to make the sentence true.

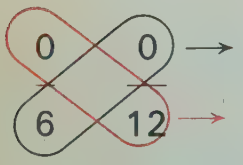
Remember: If the two "cross products" are the same, then the fractions are **equivalent.**

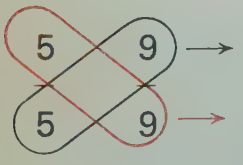
1.  $3 \times 6 =$  $2 \times 9 =$  $\frac{2}{3}$ is **equivalent** **not equivalent** to $\frac{6}{9}$.

2.  $8 \times 3 =$  $5 \times 4 =$  $\frac{5}{8}$ is **equivalent** **not equivalent** to $\frac{3}{4}$.

3.  $10 \times 4 =$  $7 \times 5 =$  $\frac{7}{10}$ is **equivalent** **not equivalent** to $\frac{4}{5}$.

4.  $10 \times 10 =$  $3 \times 37 =$  $\frac{3}{10}$ is **equivalent** **not equivalent** to $\frac{10}{37}$.

5.  $6 \times 0 =$  $0 \times 12 =$  $\frac{0}{6}$ is **equivalent** **not equivalent** to $\frac{0}{12}$.

6.  $5 \times 9 =$  $5 \times 9 =$  $\frac{5}{5}$ is **equivalent** **not equivalent** to $\frac{9}{9}$.

7. Circle the pair of fractions if they are equivalent fractions.

A $\frac{3}{8}, \frac{6}{9}$ B $\frac{2}{3}, \frac{8}{12}$ C $\frac{1}{5}, \frac{2}{9}$ D $\frac{1}{4}, \frac{5}{20}$

E $\frac{4}{4}, \frac{6}{6}$ F $\frac{1}{2}, \frac{50}{100}$ G $\frac{1}{2}, \frac{2}{1}$ H $\frac{0}{7}, \frac{0}{5}$

1. You have learned how to build a set of equivalent fractions from a lowest-terms fraction. Give the missing fractions.

$$\frac{2}{3} \rightarrow \frac{2\times 2}{2\times 3} \rightarrow \frac{3\times 2}{3\times 3} \rightarrow \frac{4\times 2}{4\times 3} \rightarrow \frac{5\times 2}{5\times 3} \rightarrow \frac{6\times 2}{6\times 3} \rightarrow \frac{7\times 2}{7\times 3}$$

$$\left\{ \frac{2}{3}, \frac{4}{6}, \quad , \quad , \quad , \quad , \quad \right\}$$

2. In each exercise below a set of equivalent fractions was built as in exercise 1.

In each ▢ write the **lowest-terms** fraction that was used to build the set.

A $\left\{ \frac{2}{3}, \frac{4}{6}, \frac{6}{9}, \frac{8}{12}, \ldots \right\}$

B $\left\{ \square, \frac{6}{10}, \frac{9}{15}, \frac{12}{20}, \ldots \right\}$

C $\left\{ \square, \frac{6}{8}, \frac{9}{12}, \frac{15}{20}, \ldots \right\}$

D $\left\{ \square, \frac{6}{14}, \frac{9}{21}, \frac{12}{28}, \ldots \right\}$

E $\left\{ \square, \square, \frac{3}{6}, \frac{4}{8}, \frac{5}{10}, \ldots \right\}$

F $\left\{ \square, \square, \frac{15}{9}, \frac{20}{12}, \frac{25}{15}, \ldots \right\}$

3. Each set is a set of **equivalent fractions.** Each set has one fraction that is in **lowest terms.** Ring that fraction.

A $\left\{ \frac{8}{12}, \frac{6}{9}, \frac{12}{18}, \frac{2}{3}, \frac{4}{6}, \frac{14}{21} \right\}$

B $\left\{ \frac{5}{6}, \frac{10}{12}, \frac{15}{18}, \frac{20}{24}, \frac{25}{30}, \frac{30}{36} \right\}$

C $\left\{ \frac{4}{14}, \frac{2}{7}, \frac{6}{21}, \frac{8}{28}, \frac{12}{42}, \frac{10}{35} \right\}$

D $\left\{ \frac{18}{30}, \frac{12}{20}, \frac{6}{10}, \frac{9}{15}, \frac{3}{5}, \frac{15}{25} \right\}$

E $\left\{ \frac{4}{3}, \frac{12}{9}, \frac{20}{15}, \frac{24}{18}, \frac{16}{12}, \frac{8}{6} \right\}$

F $\left\{ \frac{18}{42}, \frac{15}{35}, \frac{12}{28}, \frac{9}{21}, \frac{6}{14}, \frac{3}{7} \right\}$

G $\left\{ \frac{9}{24}, \frac{12}{32}, \frac{3}{8}, \frac{18}{48}, \frac{15}{40}, \frac{6}{16} \right\}$

H $\left\{ \frac{15}{20}, \frac{12}{40}, \frac{18}{60}, \frac{9}{30}, \frac{3}{10}, \frac{6}{20} \right\}$

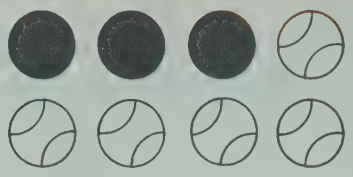
1. Write the missing numbers and fractions.

A 

_ parts are colored.

_ parts in all.

_ of the region is colored.

B 

_ balls are black.

_ balls in all.

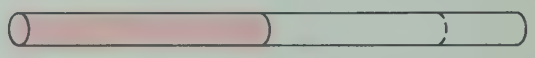
_ of the balls are black.

C 

_ parts are colored.

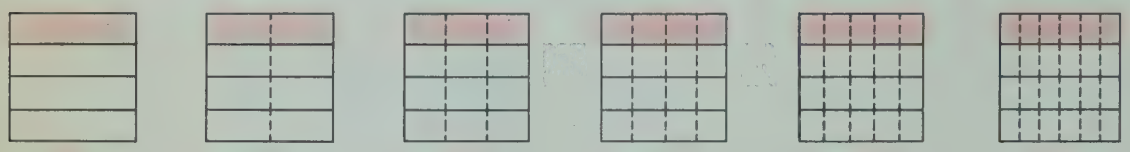
_ parts in all.

_ of the region is colored.

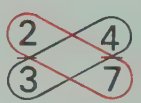
2. Is $\frac{1}{3}$ of the rod colored? _____ 

3. Are $\frac{1}{4}$ of the marbles colored? _____ 

4. Write the fraction suggested by each figure.



_ _ _ _ _ _

5. Are the two fractions $\frac{2}{3}$ and $\frac{4}{7}$ **equivalent**? _____ 

6. Write the lowest-terms fraction that was used to build the following set of equivalent fractions. $\{\_, \frac{2}{8}, \frac{3}{12}, \frac{4}{16}, \ldots\}$

Change of Pace

1. The number 12 345 679 is interesting. Find these products to see why.

A
$$\begin{array}{r} 12\,345\,679 \\ \times\ 9 \\ \hline \end{array}$$

B
$$\begin{array}{r} 12\,345\,679 \\ \times\ 18 \\ \hline \end{array}$$

C
$$\begin{array}{r} 12\,345\,679 \\ \times\ 27 \\ \hline \end{array}$$

2. What do you think you could multiply 12 345 679 by to get the following products?

A 444 444 444 _____ B 555 555 555 _____ C 666 666 666 _____

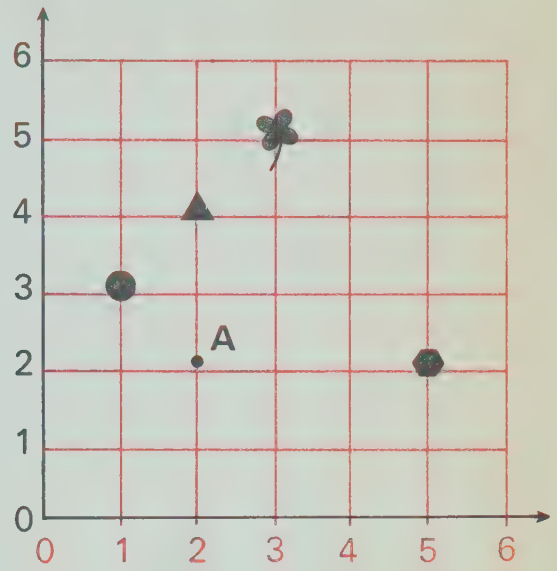
13 Geometry and Graphing

Locating and Graphing Points

Number pairs can show locations.

The ✤ is "**3** over and **5** up ↑" on the graph.

The **co-ordinates** of the ✤ are **(3, 5)**.



1. Give the missing numbers.

A The ▲ is "2 over and _____ up ↑."

B The ● is _____ over and 3 up.

Its co-ordinates are (_____, 3).

C The ⬢ is _____ over and _____ up.

Its co-ordinates are (_____, _____).

2. Use the grid in exercise 1 to graph each of these points.

Write the letter beside it.

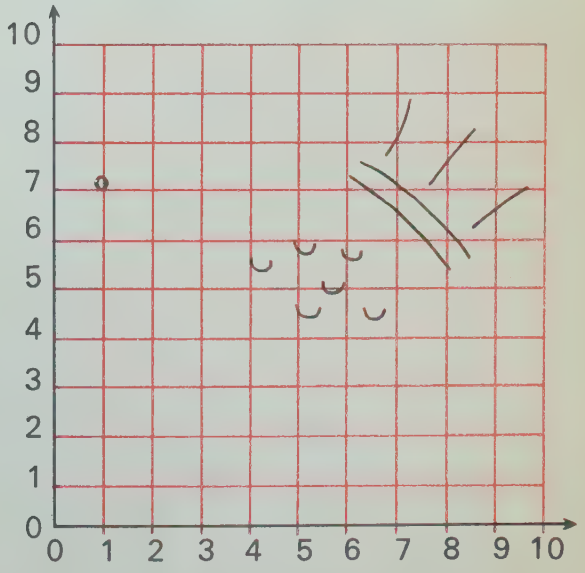
Example:

Graph letter **A** at (2, 2).

B	(3, 6)	**D**	(0, 4)	**F**	(3, 3)
C	(6, 5)	**E**	(5, 1)	**G**	(6, 0)

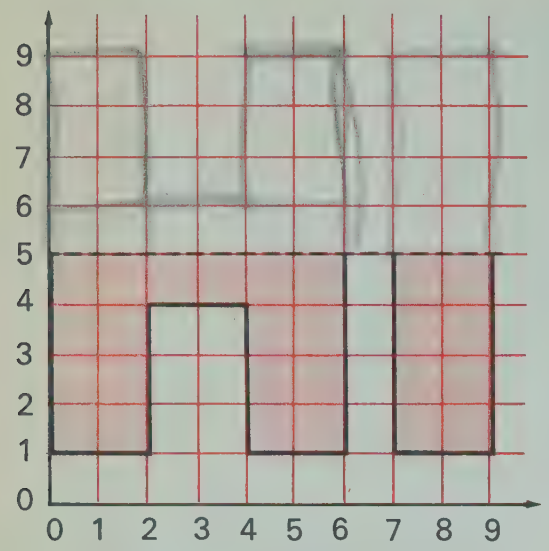
3. Draw a picture by graphing and connecting the points in the order given.

(4, 1) → (5, 2) → (5, 3) → (3, 3)
→ (1, 4) → (1, 6) → (0, 5)
(0, 7) → (1, 8) → (2, 7) → (2, 5)
→ (3, 6) → (4, 6) → (5, 7) →
(6, 9) → (8, 9) → (10, 7) → (10, 5)
→ (8, 3) → (6, 3) → (6, 1) →
(4, 1).

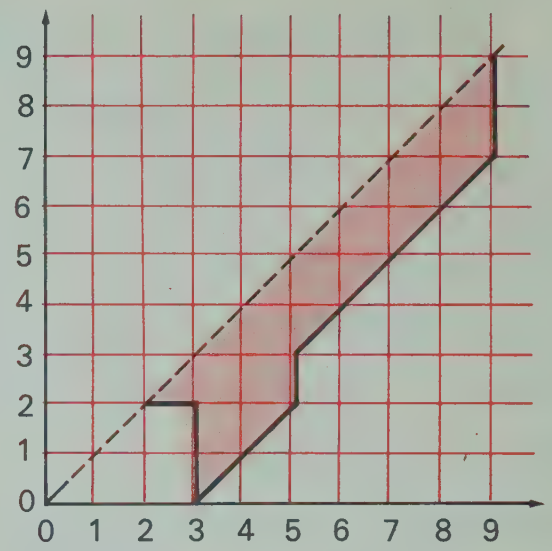


1. Draw the other half of each figure so that **symmetric** figures are formed.

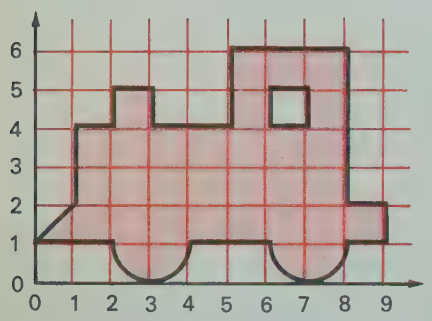
A

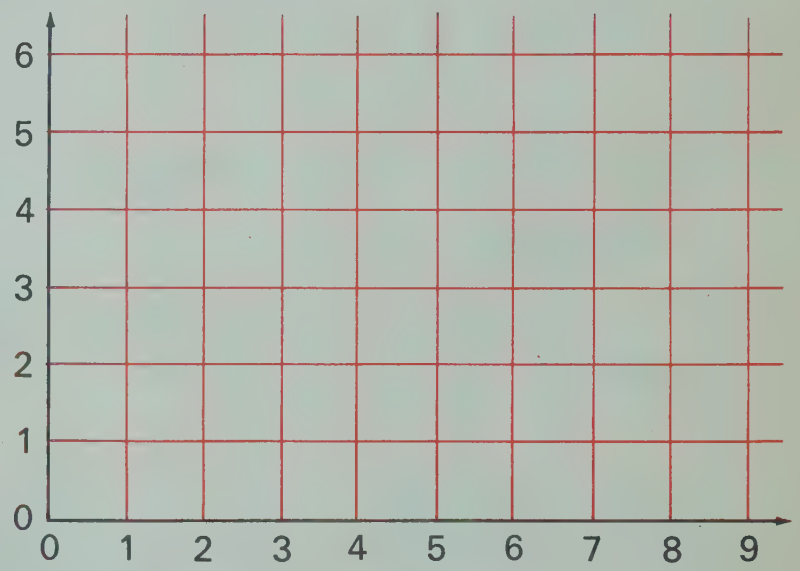


B



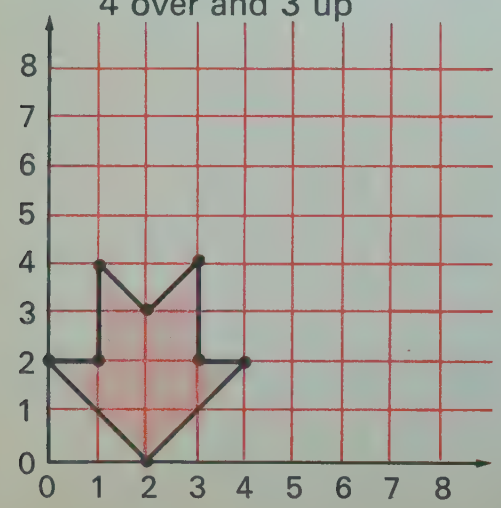
2. Use the grid at the right to make a larger drawing of the figure below so that the two figures will be **similar**.



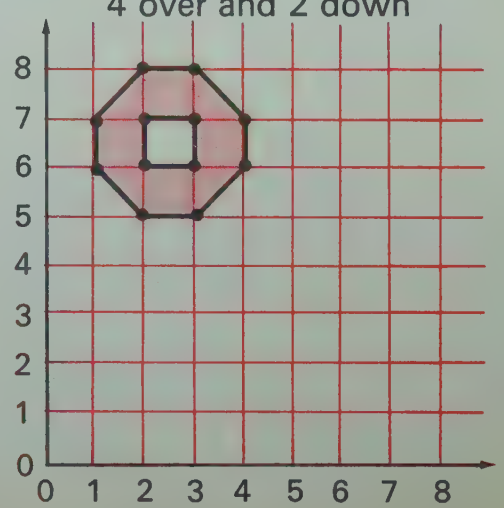


3. Use the move given and show the final position of each figure.

A 4 over and 3 up



B 4 over and 2 down



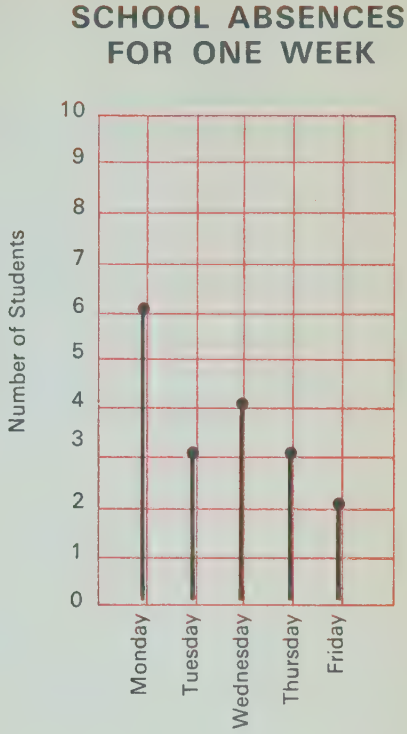
1. Use the graph at the right to answer each question below.

A On which day were the most number of students absent? _____

B How many students were absent on Wednesday? _____

C Which two days had the same number of absences? _____, _____

D What is the total number of absences for the week? _____

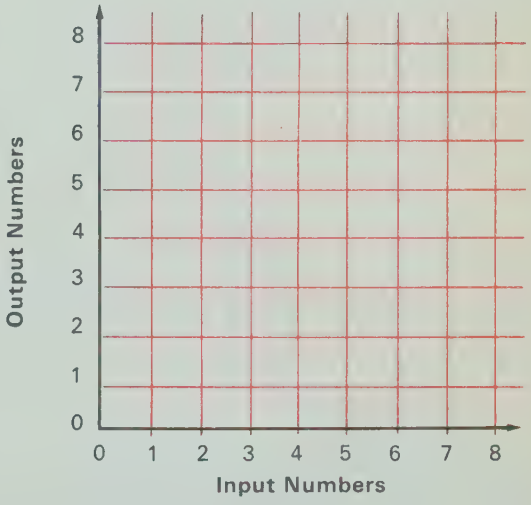


2. Complete the function tables. Then graph the number pairs on the grid.

Function Rule: Subtract

INPUT	OUTPUT
8	7
7	6
6	
5	

INPUT	OUTPUT
4	
3	
2	
1	

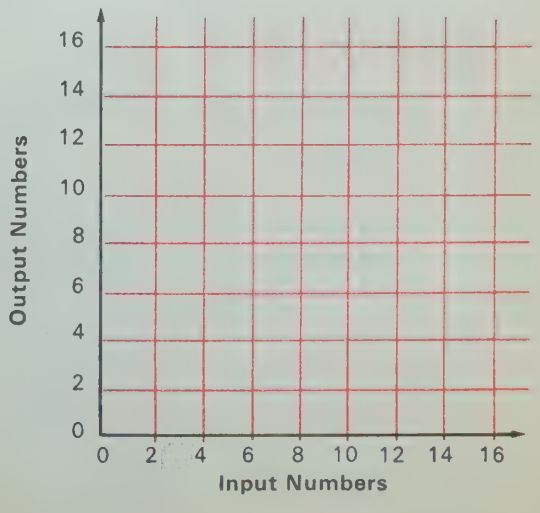


3. Complete the function tables. Then graph the number pairs on the grid.

Function Rule: Multiply by 2

INPUT	OUTPUT
0	0
1	2
2	
3	

INPUT	OUTPUT
4	
5	
6	
7	



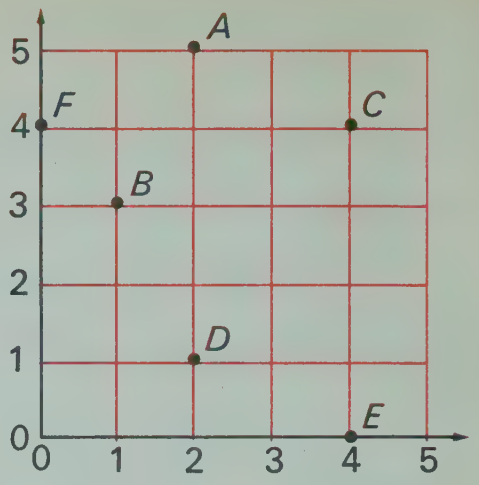
1. Give the correct number or letter in each blank.

A The letter *C* is 4 over and _____ up.

B The letter _____ is 2 over and 1 up.

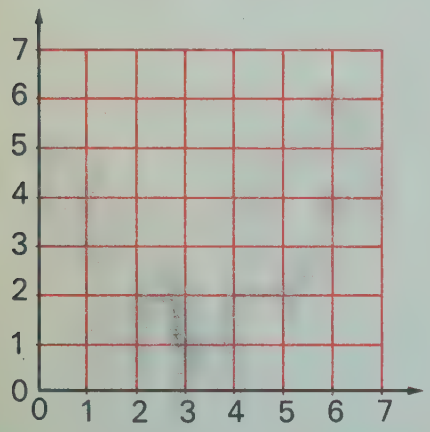
C The letter whose co-ordinates are (4, 0) is _____.

D The co-ordinates of letter *B* are (_____, _____).

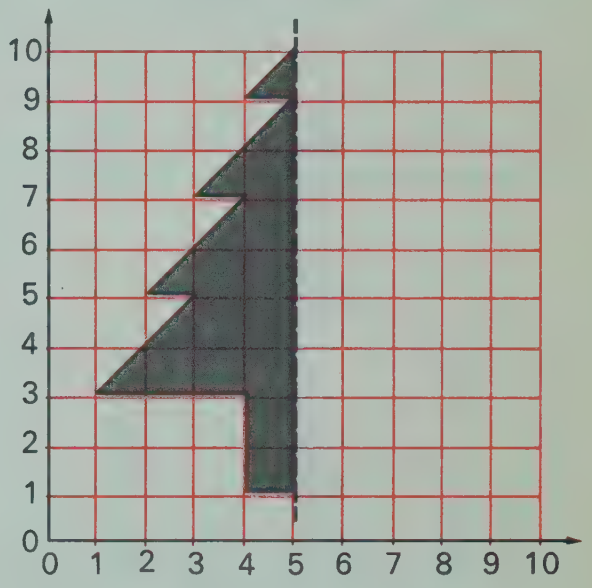


2. Graph and connect the points in the order given.

(3, 1) → (4, 1) → (4, 2) → (5, 2) → (6, 4) → (7, 4) → (6, 6) → (4, 4) → (1, 4) → (0, 5) → (0, 4) → (1, 3) → (1, 1) → (2, 1) → (2, 2) → (3, 2) → (3, 1).

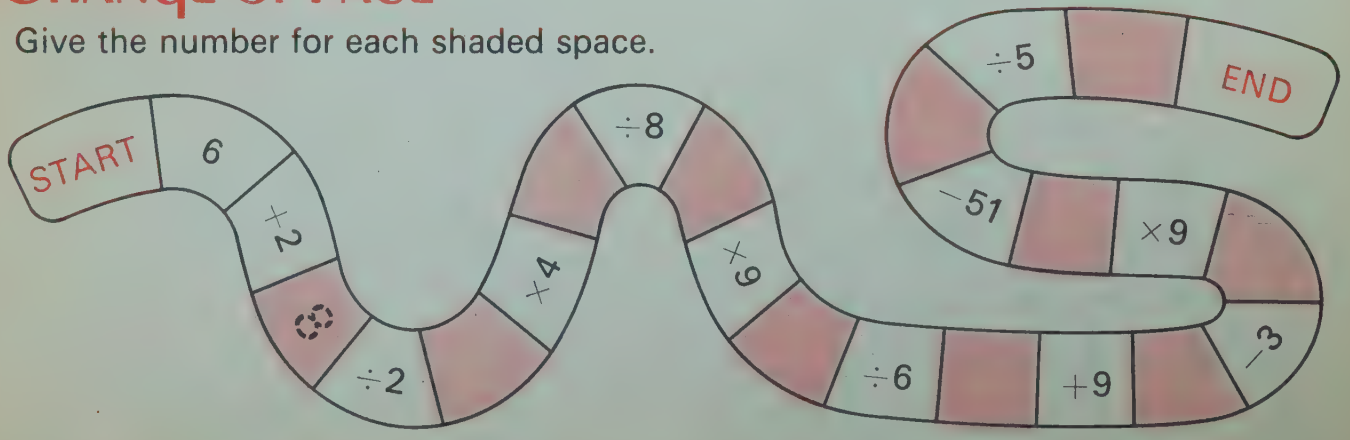


3. Draw the other half of the figure so that it will be **symmetric**.



Change of Pace

Give the number for each shaded space.



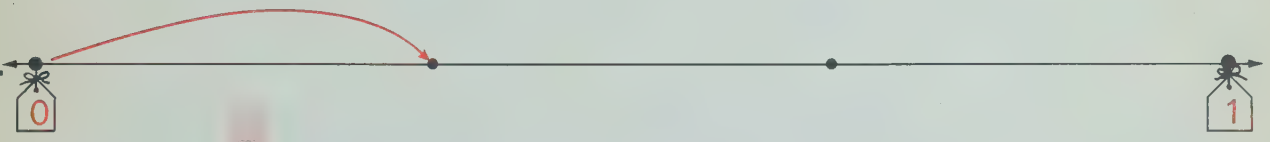
14 Fractional Numbers

Fractions and Length

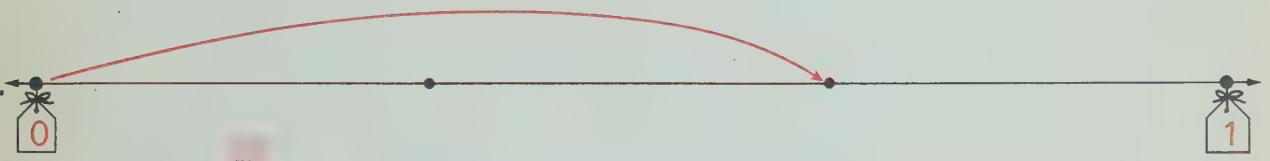
In each exercise below, two tags are tied on a wire. The arrow shows a cricket's jump. Write a fraction in each

1. 

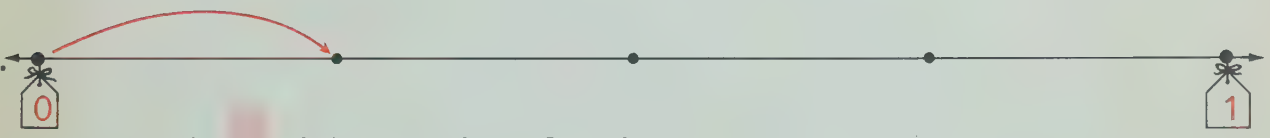
The cricket has jumped ___ of the way from the 0 tag to the 1 tag.

2. 

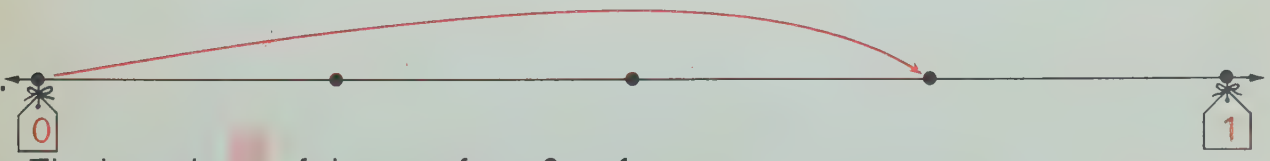
The jump is ___ of the way from 0 to 1.

3. 

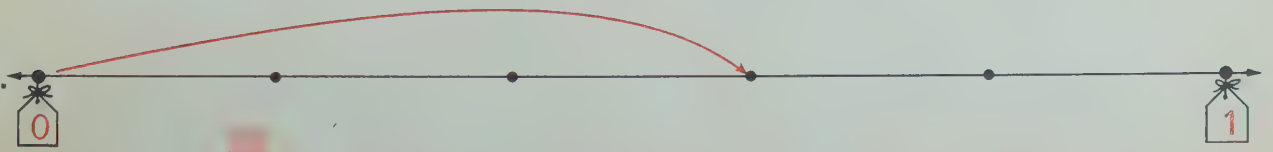
The jump is ___ of the way from 0 to 1.

4. 

The jump is ___ of the way from 0 to 1.

5. 

The jump is ___ of the way from 0 to 1.

6. 

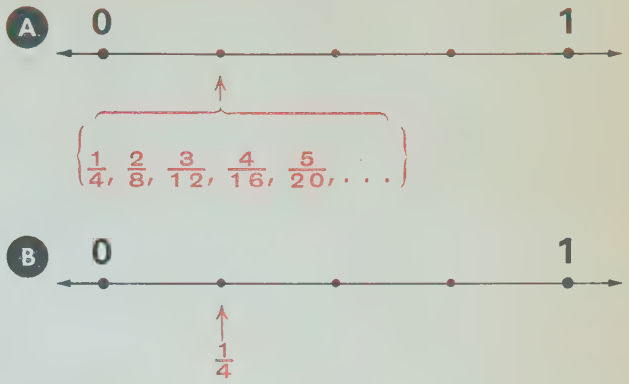
The jump is ___ of the way from 0 to 1.

For each set of equivalent fractions → we think of **one fractional number** → and **one point** on the number line.

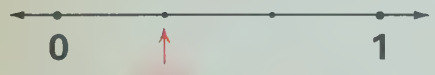
For each set of equivalent fractions there is one fractional number. Put a ring around the point for the number.

	Set of equivalent fractions for the number	Which point on the number line goes with the fractional number?
1.	$\{\frac{1}{2}, \frac{2}{4}, \frac{3}{6}, \frac{4}{8}, \cdots\}$	0 — 1
2.	$\{\frac{1}{5}, \frac{2}{10}, \frac{3}{15}, \frac{4}{20}, \cdots\}$	0 — 1
3.	$\{\frac{3}{4}, \frac{6}{8}, \frac{9}{12}, \frac{12}{16}, \cdots\}$	0 — 1
4.	$\{\frac{3}{5}, \frac{6}{10}, \frac{9}{15}, \frac{12}{20}, \cdots\}$	0 — 1
5.	$\{\frac{1}{6}, \frac{2}{12}, \frac{3}{18}, \frac{4}{24}, \cdots\}$	0 — 1
6.	$\{\frac{5}{6}, \frac{10}{12}, \frac{15}{18}, \frac{20}{24}, \cdots\}$	0 — 1
7.	$\{\frac{3}{8}, \frac{6}{16}, \frac{9}{24}, \frac{12}{32}, \cdots\}$	0 — 1
8.	$\{\frac{7}{8}, \frac{14}{16}, \frac{12}{24}, \frac{28}{32}, \cdots\}$	0 — 1

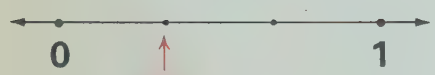
Instead of naming a fractional number by writing a set of equivalent fractions as in example A, we can use **any one** of the fractions from the set to name the fractional number, as shown in example B. We usually use the lowest-terms fraction to name the number.



In each exercise, write a fraction to name the fractional number for the point over the colored arrow. **Use a different fraction in each exercise.**

1.


2.


3.


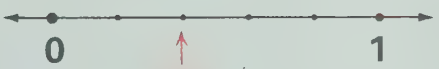
4.


5.


6.


7.

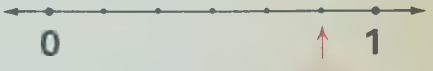

8.


9.


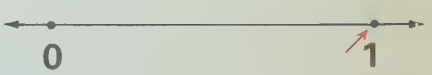
10.

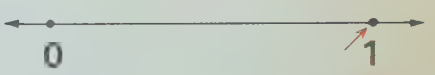

11.


12.


13.


14.


15.


16.


17.


18.


1. If two fractions can be used to name the same fractional number, we write an equality sign (=) between them. Write the missing numerators and denominators.

A 

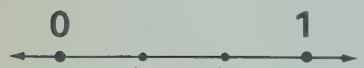
$\frac{1}{2} = \frac{\square}{8}$

C 

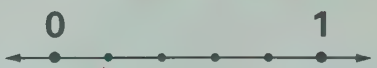
$\frac{2}{8} = \frac{1}{\square}$ $\frac{3}{4} = \frac{9}{\square}$

E 

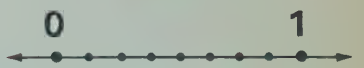
$\frac{4}{12} = \frac{2}{\square}$ $\frac{10}{12} = \frac{\square}{18}$

B 

$\frac{1}{3} = \frac{\square}{6}$ $\frac{2}{3} = \frac{\square}{6}$

D 

$\frac{\square}{10} = \frac{1}{5}$ $\frac{4}{5} = \frac{\square}{20}$

F 

$\frac{1}{8} = \frac{3}{\square}$ $\frac{\square}{32} = \frac{14}{16}$

2. Answer **T** (true) or **F** (false).

A $\frac{1}{3}$ is equivalent to $\frac{3}{9}$. _____

B $\frac{3}{4}$ is equivalent to $\frac{8}{12}$. _____

C $\frac{2}{7}$ is equivalent to $\frac{1}{4}$. _____

D $\frac{3}{5}$ is equivalent to $\frac{9}{15}$. _____

E $\frac{1}{3} = \frac{3}{9}$ _____

F $\frac{3}{4} = \frac{8}{12}$ _____

G $\frac{2}{7} = \frac{1}{4}$ _____

H $\frac{3}{5} = \frac{9}{15}$ _____

I $\frac{4}{5} = \frac{8}{10}$ _____

J $\frac{4}{9} = \frac{5}{8}$ _____

K $\frac{5}{8} = \frac{4}{7}$ _____

L $\frac{3}{8} = \frac{9}{24}$ _____

Change of Pace

142 857 is another interesting number. When you multiply the number by 1, 2, 3, 4, 5, or 6, you can read the answer on this dial.
For example, to read the answer for 1 × 142 857 you start at the arrow and read "142 857" going clockwise around the dial.

Find the products below and mark an arrow on each dial that shows where you start to read the answer.

A $\begin{array}{r} 142\,857 \\ \times\ 2 \\ \hline \end{array}$ 

B $\begin{array}{r} 142\,857 \\ \times\ 3 \\ \hline \end{array}$ 

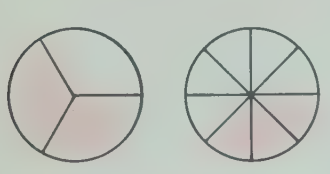
C $\begin{array}{r} 142\,857 \\ \times\ 4 \\ \hline \end{array}$ 

D $\begin{array}{r} 142\,857 \\ \times\ 5 \\ \hline \end{array}$ 

E $\begin{array}{r} 142\,857 \\ \times\ 6 \\ \hline \end{array}$ 

1. The shaded part of each region will help you tell which fractional number is greater. Write the correct sign ($<$ or $>$) in each ●.

A



$\frac{2}{3} > \frac{3}{8}$

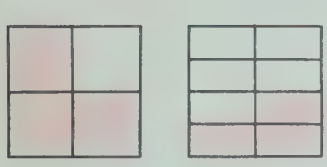
B

$\frac{1}{4} > \frac{1}{5}$

C

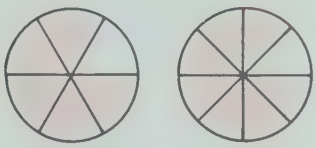
$\frac{1}{4} < \frac{1}{2}$

D



$\frac{3}{4} > \frac{3}{8}$

E



$\frac{5}{6} < \frac{7}{8}$

F

$\frac{2}{3} < \frac{4}{7}$

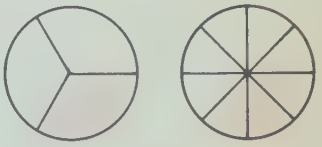
G

$\frac{3}{8} > \frac{1}{4}$

H

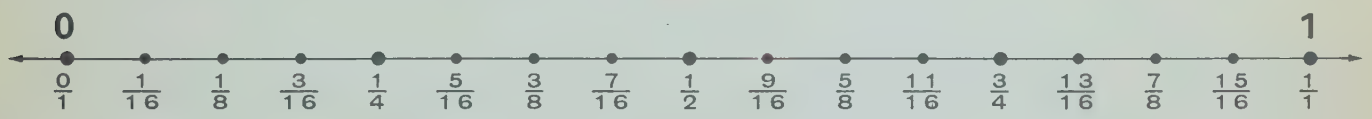
$\frac{5}{7} < \frac{5}{8}$

I



$\frac{1}{3} < \frac{3}{8}$

2. The number line will help you tell which fractional number is greater. Write the correct sign ($<$ or $>$) in each ●.



A $\frac{5}{16} < \frac{3}{8}$

B $\frac{1}{8} < \frac{1}{4}$

C $\frac{5}{8} < \frac{13}{16}$

D $\frac{11}{16} > \frac{1}{2}$

E $\frac{9}{16} > \frac{1}{4}$

F $\frac{1}{2} > \frac{3}{8}$

G $\frac{1}{8} < \frac{1}{2}$

H $\frac{1}{16} < \frac{1}{4}$

I $\frac{5}{8} > \frac{7}{16}$

J $\frac{11}{16} > \frac{7}{8}$

K $\frac{7}{8} < \frac{15}{16}$

L $\frac{13}{16} < \frac{7}{8}$

M $\frac{3}{16} < \frac{1}{2}$

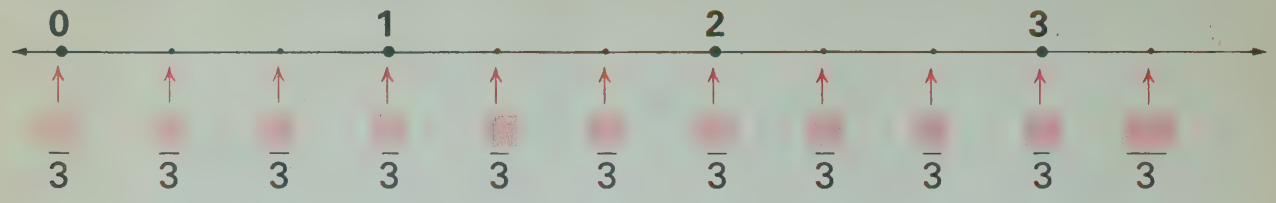
N $\frac{3}{8} < \frac{5}{8}$

O $\frac{3}{4} > \frac{3}{8}$

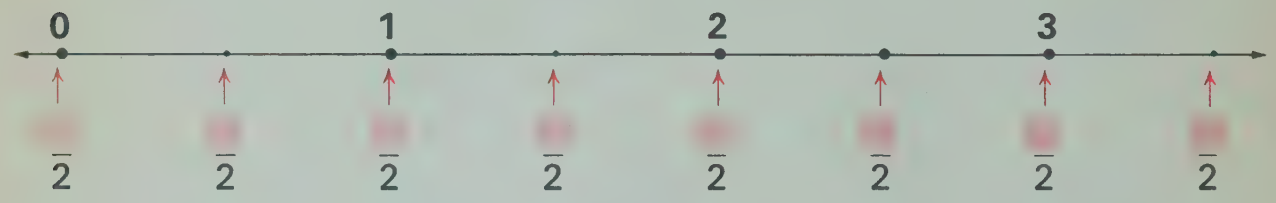
P $\frac{3}{4} < \frac{15}{16}$

1. Give the missing numerators.

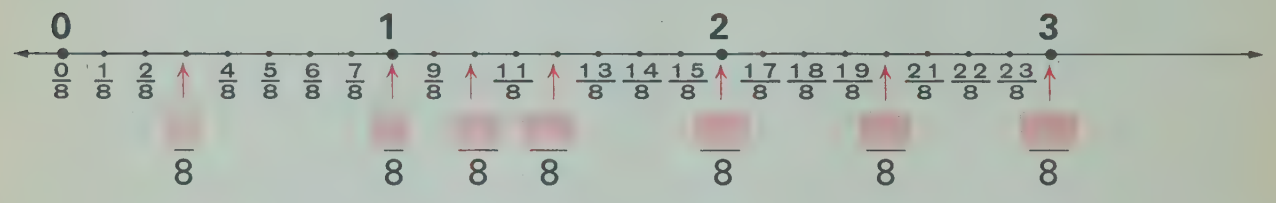
A



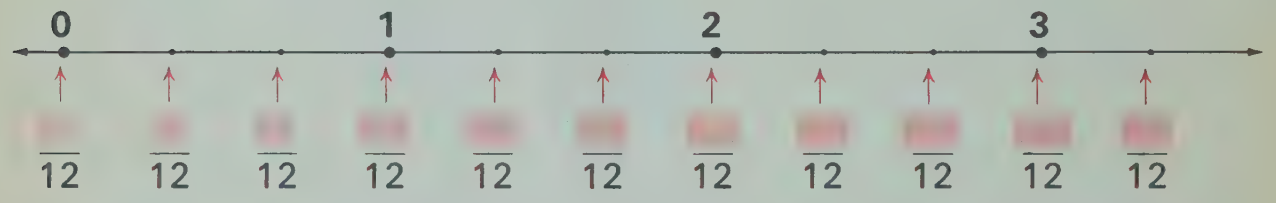
B



C



D



2. Give the missing numbers. The number lines above will help you.

A $2 = \frac{\square}{3}$

B $3 = \frac{\square}{8}$

C $\frac{36}{12} = \square$

D $1 = \frac{8}{\square}$

E $3 = \frac{\square}{2}$

F $2 = \frac{24}{\square}$

G $3 = \frac{\square}{12}$

H $0 = \frac{\square}{3}$

I $\frac{3}{3} = \frac{\square}{2}$

J $2 = \frac{\square}{8}$

K $\frac{9}{3} = \square$

L $\frac{6}{2} = \square$

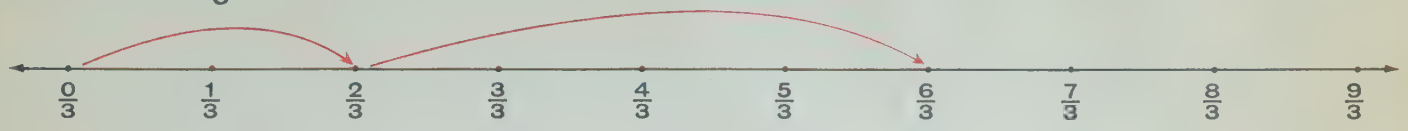
3. Put a ring around the point on the number line for each fractional number given.

A $\frac{9}{4}$

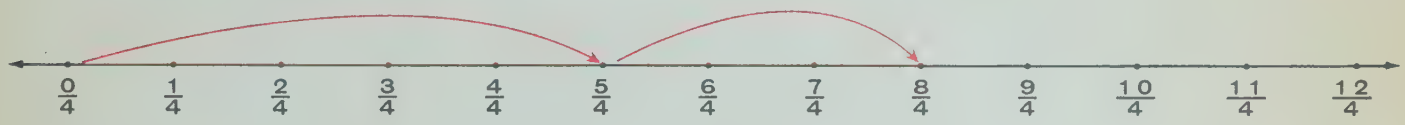
B $\frac{8}{5}$

C $\frac{19}{6}$

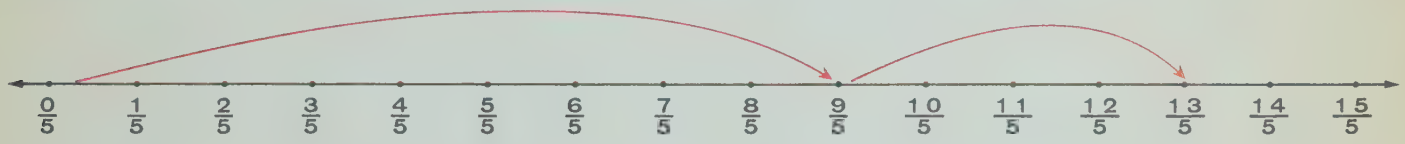
The number lines below will help you think about adding fractional numbers.
Give the missing numbers.

1. 

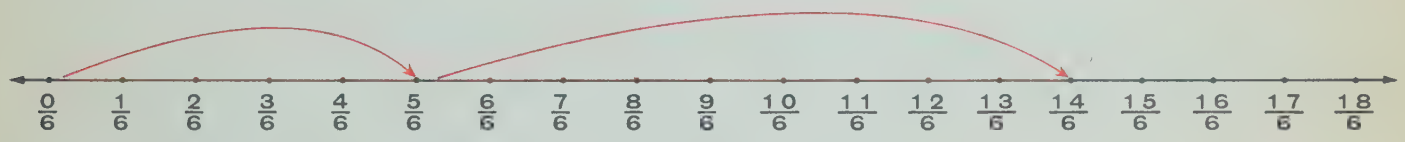
First jump _____ thirds. Then jump _____ more thirds. $\frac{2}{3} + \frac{4}{3} =$ _____

2. 

First jump _____ fourths. Then jump _____ more fourths. _____ $+ \frac{3}{4} =$ _____

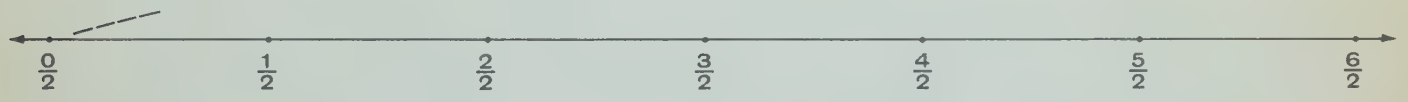
3. 

First jump _____ fifths. Then jump _____ more fifths. $\frac{9}{5} +$ _____ = _____

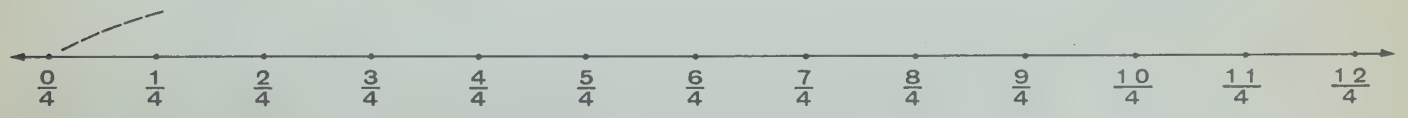
4. 

First jump _____ sixths. Then jump _____ more sixths. _____ + _____ = _____

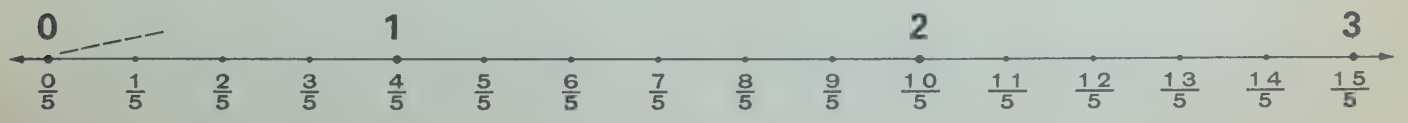
For exercises 5 through 7, complete the jumps on each number line. Then give the sum.

5. 

First jump 3 halves. Then jump 2 halves. $\frac{3}{2} + \frac{2}{2} =$ _____

6. 

First jump 3 fourths. Then jump 7 fourths. $\frac{3}{4} + \frac{7}{4} =$ _____

7. 

First jump 2. Then jump $\frac{3}{5}$. $2 + \frac{3}{5} =$ _____

1. We can use fractions to name a whole number. Give the missing fractions for the "whole number" points on the number line below.

A $\frac{0}{2}$ $\frac{2}{2}$ $\frac{4}{2}$ $\frac{6}{2}$

B $\frac{0}{5}$ $\frac{5}{5}$ $\frac{10}{5}$

2. Give the missing numerator for each fraction.

A $1 = \frac{\quad}{2}$ C $0 = \frac{\quad}{2}$ E $1 = \frac{\quad}{3}$ G $7 = \frac{\quad}{4}$ I $0 = \frac{\quad}{5}$

B $5 = \frac{\quad}{2}$ D $2 = \frac{\quad}{3}$ F $3 = \frac{\quad}{3}$ H $1 = \frac{\quad}{4}$ J $9 = \frac{\quad}{5}$

3. Numerals such as $3\frac{1}{2}$ are called **mixed numerals**. Write the mixed numeral for the point over the colored arrow.

4. The mixed numeral $3\frac{1}{2}$ means $3 + \frac{1}{2}$. Give the correct number for each blank.

A $3\frac{1}{4}$ means $3 +$ _____ C $2\frac{1}{7} =$ _____ $+ \frac{1}{7}$ E _____ $= 8 + \frac{3}{4}$

B $2\frac{1}{5}$ means _____ $+ \frac{1}{5}$ D _____ $= 4 + \frac{1}{6}$ F $5\frac{1}{6} =$ _____ $+$ _____

5. Give the correct numerator in each ▢. Then write the improper fraction in each blank.

A $1\frac{1}{2} = \frac{▢}{2} + \frac{1}{2} =$ _____ C $1\frac{1}{3} = \frac{▢}{3} + \frac{1}{3} =$ _____ E $2\frac{1}{4} = \frac{▢}{4} + \frac{1}{4} =$ _____

B $2\frac{1}{2} = \frac{▢}{2} + \frac{1}{2} =$ _____ D $2\frac{1}{3} = \frac{▢}{3} + \frac{1}{3} =$ _____ F $3\frac{1}{5} = \frac{▢}{5} + \frac{1}{5} =$ _____

6. Give a mixed numeral for each fraction.

A $\frac{7}{2}$ _____ B $\frac{5}{3}$ _____ C $\frac{7}{4}$ _____ D $\frac{11}{5}$ _____

1. Give a mixed numeral for each sum.

A $3 + \frac{1}{5} =$ _____

B $1 + \frac{3}{7} =$ _____

C $\frac{1}{3} + 8 =$ _____

D $3 + \frac{9}{10} =$ _____

E $2 + \frac{5}{6} =$ _____

F $7 + \frac{1}{6} =$ _____

2. Give an improper fraction for each sum.

A $\frac{1}{5} + \frac{4}{5} =$ _____

B $\frac{3}{4} + \frac{2}{4} =$ _____

C $\frac{3}{5} + \frac{3}{5} =$ _____

D $\frac{7}{6} + \frac{5}{6} =$ _____

E $\frac{3}{4} + \frac{5}{4} =$ _____

F $\frac{6}{5} + \frac{0}{5} =$ _____

3. Give a whole number or a mixed numeral for each sum.

A $\frac{1}{5} + \frac{4}{5} =$ _____

B $\frac{3}{4} + \frac{2}{4} =$ _____

C $\frac{3}{5} + \frac{3}{5} =$ _____

D $\frac{7}{6} + \frac{5}{6} =$ _____

E $1\frac{3}{4} + \frac{5}{4} =$ _____

F $1\frac{1}{2} + 0 =$ _____

4. Give the missing numerator for each fraction.

A $\frac{1}{2} = \frac{\square}{4}$

B $\frac{1}{2} = \frac{\square}{8}$

C $\frac{1}{5} = \frac{\square}{10}$

D $\frac{1}{3} = \frac{\square}{12}$

E $\frac{1}{2} = \frac{\square}{6}$

F $\frac{1}{3} = \frac{\square}{6}$

5. Use the fractions in exercise 4 to help you find the sums.

A $\frac{1}{2} + \frac{1}{4} =$ _____

B $1\frac{1}{2} + \frac{1}{8} =$ _____

C $\frac{1}{5} + \frac{7}{10} =$ _____

D $\frac{1}{3} + \frac{7}{12} =$ _____

E $\frac{1}{2} + \frac{1}{3} =$ _____

F $1\frac{1}{3} + 2\frac{1}{2} =$ _____

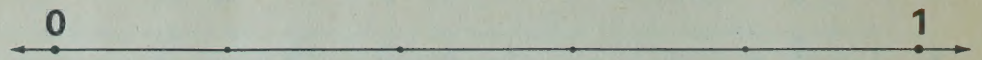
6. Solve each story problem.

A Tom's green pencil is $5\frac{1}{4}$ cm long. Jeff's pencil is $4\frac{3}{4}$ cm long. What is their combined lengths? _____

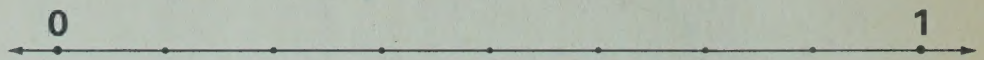
B Ann bought $\frac{1}{2}$ kilogram of cashews. and $1\frac{1}{4}$ kilograms of peanuts. How many kilograms of nuts did she buy? _____

1. Put a ring around the point on the number line for the number indicated by the set of equivalent fractions.

A $\{\frac{2}{5}, \frac{4}{10}, \frac{6}{15}, \frac{8}{20}, \ldots\}$

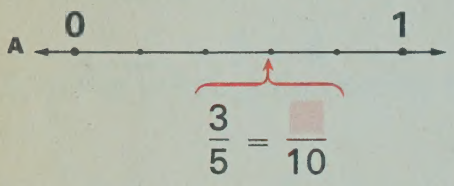


B $\{\frac{5}{8}, \frac{10}{16}, \frac{15}{24}, \frac{20}{32}, \ldots\}$

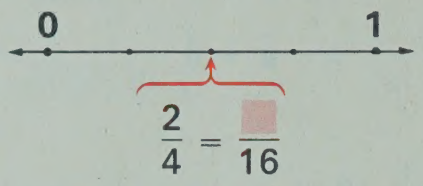


2. Give the correct numerator so that both fractions name the same fractional number.

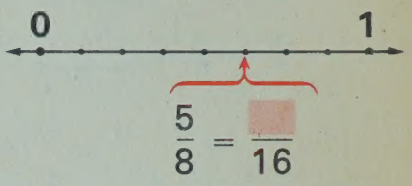
A



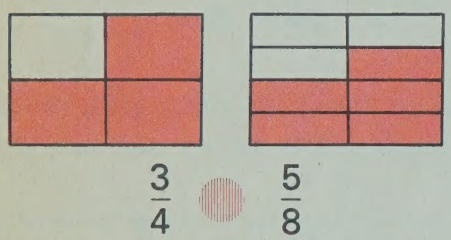
B



C



3. Write the correct sign ($<$ or $>$) in the ▢.



4. Give the missing numbers.

A $3 = \frac{\square}{2}$

B $\frac{8}{4} =$ _____

C $\frac{12}{4} =$ _____

D $\frac{10}{3} =$ _____

5. Find the sums.

A $\frac{3}{5} + \frac{4}{5} =$ _____

B $3 + \frac{4}{5} =$ _____

C $\frac{3}{7} + \frac{4}{7} =$ _____

Change of Pace

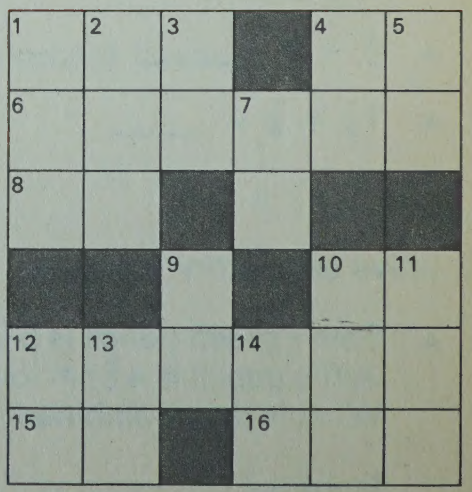
Work the puzzle.

Across

1. 9 hundreds, 6 tens, and 5 ones
4. Number of months in a year
6. Largest number that can be written using the digits 4, 5, 6, 7, 8, 9
8. $(10 \times 10) - (1 \times 10)$
10. Area of this rectangle (4 by 9) ▢
12. 3010×50
15. Perimeter of the rectangle in item 10
16. Smallest 3-digit number

Down

1. Largest 3-digit number
2. 34×20
3. A number between 55 and 59
4. Half of 30
5. 2 dozen
7. 16×4
9. $1 \times 2 \times 5$
11. 40×15
12. $2\frac{2}{5} = \frac{\square\square}{5}$
13. $(8 \times 8) - 8$
14. $459 \div 9$



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